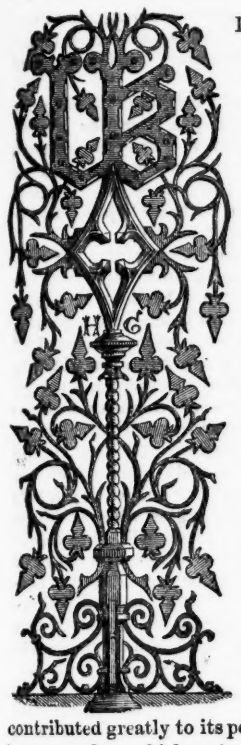
The Builder.

VOL. XX.—No. 1030.

Steps Backward at the Institute of Architects.



HERE are the discreet and experienced men who founded, fostered, and achieved the success of the Royal Institute of British Architects? Are they absent from its councils, or are their voices no longer listened to? A new policy has been inaugurated by the officials of 1862,—a backward policy, a bad policy: a policy of retention; of secrecy, and, as certainly as darkness follows night, of jobbery hereafter when the occasion offers.

Giving up that openness and entire publicity which have long characterized the proceedings of the Institute; which have contributed greatly to its popularity abroad and at home; and to which not a single valid objection has been advanced; the newly-appointed managers, scarcely warm in their seats, have taken upon themselves to imitate an evil course pursued at a neighbouring Institution, to which the strongest objections have been again and again expressed, and are still felt: they have even increased its objectionable features. The regulations which lead us to these observations will speak for themselves. They have been forwarded to us with a note from the hon. secretaries directing attention to them, and in which they say, they trust we shall "find them advantageous rather than objectionable." *We* may; but most certainly the Institute will not:—

Extract from Report of Committee on Publication of Papers, &c., adopted by Council, 14th July, 1862:—

Resolved: 1st.—"It is not desirable that the papers should be published *in extenso* in the public journals, as it tends to depreciate the value of their copyright, and of their subsequent publication in the 'Transactions' of the Royal Institute of British Architects."....

Also—"That a competent reporter should be appointed by the Royal Institute of British Architects, to attend the meetings, and that no other reporter should be admitted; and that no one else, without the authority of the Council, should be allowed to furnish for publication any report of the proceedings of the Royal Institute of British Architects.

That a full abstract report of all papers and meetings should be furnished by the Royal Institute of British Architects [the printed notice to members says, 'by the hon. secretaries'], on payment of one guinea for each report; and that a short abstract, as at present furnished to other journals, according to the instructions of Council, May 12, 1862, should be furnished to such journal as may desire it, without payment; and that it is very desirable that, to forward this object, the papers intended to be read at the Institute should be presented to the hon. secretaries previously to their being read.

The Committee consider, further, that the conditions of By-Law No. 44* should be hereafter strictly adhered to; and that the papers should be issued three times during the session, instead of only at the conclusion of it, as at present."

The papers read are not to be published in the journals, the Council say, because such publication "tends to depreciate the value of their copyright." On whom does this asserted loss fall? The papers are the property of the Institute, who print just sufficient copies to supply each member (say 350) with one. The "Transactions" are not for sale. There can be no loss there: and the Council will scarcely venture to place the Institute on such low grounds as to say, that any eligible member of the profession refrains from becoming a member of the Institute because he can read in the *Builder* the papers read before it. The value of the papers, instead of being depreciated by wide publication, is immensely increased if they be good for anything: thousands have the benefit of the information they may contain, instead of a few hundreds: the public have the advantage, and the Institute in no way suffers. "In no way suffers," did we say? The Institute is greatly benefited by the step: its reputation is spread, and its character advanced, while the art should be advantaged by the enlightenment of the general public. The papers themselves have been better because of their intended publication in the journals, and in some cases (as we know) would not have been read there at all but for that publication. The more the matter is thought about, the more unwise and short-sighted the resolution appears.

So, too, with that for shutting out the reporters, and supplying, at a guinea each, official reports, cooked or not, as it may be. And in saying "cooked," we mean nothing personal: we are dealing with human nature. Under other Councils, every effort was made, on special occasions, and wisely too, to induce the journals to send reporters and to spread the fact abroad, east, west, north, and south, that the Royal Institute of British Architects was at work, fulfilling its mission, and justifying the sovereign in the bestowal of its charter. The new resolution, which, instead of inviting reporters to come, stupidly forbids admission to those who may be good enough to do so, is a step backwards with a vengeance. People, by and by, will be wanting to know who was president, and who were on the council, when such an enlightened course for the avoidance of publicity was taken.

It must not be supposed that, in making these observations, we are speaking in the interest of the *Builder*. We speak wholly and entirely in the interest of the Institute, the art, and the profession. For years past, in compliance with the special request of what we must consider a wiser Council, we have uniformly published the papers read before the Institute, and accurate reports of the discussions, sometimes with much inconvenience, and with the feeling that the space might have been better occupied. From our pages these memoirs and reports have been republished in America, India, &c., and translated in Belgium, France, Italy, and Germany. To be relieved from the necessity of always printing these papers will be an advantage rather than otherwise, so far as we are concerned; but to the Institute, and to the art, we have no hesitation in asserting the discontinuance will be a great injury. The Institute has had an unvarying friend for years in the *Builder*. The *Builder* owes no thanks to the Institute. For our own sake, we are perfectly indifferent in the matter; but for the sake of the Institute we sincerely hope it may not be too late for the re-consideration and ultimate withdrawal of these unworthy and unwise resolutions.

* Extract from By-Law No. 44:—"Every paper which may be presented to the Institute shall, in consequence of such presentation, be considered the property of the Institute; and the Council may publish the same in any way and at any time they may think proper, unless there shall have been any previous engagement with the author to the contrary."

THE TWO HARTLEPOOLS:

CONDITION OF OUR TOWNS.*

To go to West Hartlepool from Old Hartlepool there is choice of two ways,—a roundabout route by rail, or a short cut across the Slake by ferry. We will convey our readers by the latter route, pointing out that there are opposition ferry-boats splashing and plying to and fro all day, lettered, self-sacrificially, "Live and let live." Landing in a long covered gallery,—clean, and paved with stone,—and emerging from it, we are on the opposite seashore, which is strewed with waifs of the wreck of the seventy-five ships that were lost in the memorable storm in 1859—piles of ship timber, rusty and water-worn. Facing the sea is a long tarred wooden shed, placarded, with clanging, clashing, reverberating noises escaping from the broken-paned windows; and drying in the air are rows and rows of sailors' shirts. Then the cindery road is bordered on one side by rows of two-storied small brick houses, one of them telling of the meeting of nations in its foreign title—the Voltigeur tavern: these face the sea. The next row turn their backs to the ocean, and their fronts to the country across the Slake. From one of them an old lady comes forth as we pass, and throws a pailful of slops into the road, which we observe is balked up with cinders to prevent the same from returning to her premises. The back of one of these poor places is labelled, "Police-station;" another, "Post-office." Then we come to wooden sheds in Californian profusion, mostly built of wreck; their proprietors dealing in marine stores, and festooning their property with rusty cables, and tasselling it with bunches of rusty anchors, hooks, bars, &c.; a space of ground paled with pieces of wreck, containing a slaughter-house, before the door of which a dog is in charge of a sheep in the last stage of fatigue, and rows of props and clothes'-lines, on which more blue shirts are fluttering; a few more rows of small brick houses; and so find our way to the spacious docks of the West Hartlepool Company.

Behold a broad quay-side, with a well-paved margin. It is laid with many tram-roads for trucks. Black-hulled ships are moored alongside, lading and unlading; others are still riding without the tide-gate on the dimpled waters, waiting for the puffing, bustling little tugs to tow them in. There are queer cranes bordering the water's side, acting on a principle akin in effect to that of elephants' trunks,—slowly drawing up package after package from the deep holds, and depositing them on stages conveniently for removal; there are hanging bridges, at great elevations, at regular intervals, bringing trucks of coal over the decks of vessels, which are so contrived that at the withdrawal of a fastening the bottom falls down as a flap, and the coals are precipitated into the hold with a rushing noise as of a whirlwind, followed by a clap of thunder; white wooden rocket-houses and look-outs, like eccentric bathing-machines; a brazen bell, in a tall wooden frame, with a gabled cover over it; powerful horses dragging trucks along the tramways; immense warehouses, newly built of stone, covering acres of ground; brawny men, with their sleeves turned up, busy in little knots—to be seen in glimpses through the cobwebs of rigging as we walk. Close at hand, a vessel, painted black picked out with white, is taking in a cargo of empty wine bottles: next to this, a schooner, painted green picked out with red and white, is unloading a cargo of pit-props; further on, another ship is taking on board a load of iron rails for railroads. A dingy line of houses overlooks the busy scene at this point, occupied by a ship-baker; a ship-chandler; an earthenware depôt, where, parenthetically, the best price is given for old rope; a ship-smith, &c., appropriately. As we still circuit the docks in the direction of the monster warehouses, a railway train passes, at full speed, in unpleasant proximity to the water's edge, considering we are between the two; but locomotives appear to be taken into everybody's confidence in this district. The lines upon which they run are crossed and recrossed by multitudes as ordinary road-crossings; and in colliery villages—such as Castle Eden colliery village, seven miles distant from Hartlepool, not to deal in generalities—a line, with all its traffic, runs through the place before the cottage-doors, without a plank or pale to keep folks off.

The new warehouses at West Hartlepool might be classed under the head of naval architecture. They appear, as they are approached from a distance, to be built upon the model of the hulk of a man-of-war, with a deck-awning up, pierced, tier after tier, with port-holes. On examination, we are glad to admit some few pounds have been expended in their construction to gratify the eyes of the nations who will look upon them. The largest warehouse is built upon high open arches, covering as much space as a Belgravian square. There are four stories above this, besides further stowage-room in a high-pitched slate roof. The ornamentation alluded to is simply a corbel table under the eaves, which, though slight, is not without an effect for which the eye is grateful, remembering the uncompromising plainness of dock warehouses erected at an earlier date. Adjoining the docks are timber depôts, where there are stacks of pit-props, scaffold-poles, masts, battens, baulks, and planks; and the foot falls silently on a road littered with bark. Close, also, upon the docks are Piles' iron-ship building yards. Two immense ships are in their cradles,—the iron plates being fastened to one; the iron skeleton of the other, riddled with

* See page 741, *ante*.

rivet-holes, being in formation; and platers, angle-iron smiths, riveters, holders-up, helpers, heaters, and blowers—men and boys—are as busy as they can be. In all these regions devoted to commerce, every contrivance appears to be adopted that is conducive to the most orderly despatch of the business to be performed, whether in the bringing of goods to the dock, the carrying of them away, their stowage on the spot, the lading or unlading of over-sea ships, or ship-building. Steam, machinery, division of labour, large outlays in the first instance, with constant vigilance to maintain every accessory in working order, are brought to bear upon a subject when profit is concerned. Would that the same comprehensive management, the same energy, the same forethought, could be extended to the housings of the workers after they have ceased their labour for the day, and profit is no longer in question!

The town lies to the south-west of the docks. Victoria-terrace leads the way; this is a long row of second-rate shops with cellars below them, pinched yards, a long dock-shed and a dirty alley with a gutter in the middle of it behind them, and houses above them overlooking a large waste tract, at the boundary of which a coal railway is in full swing. The railway crosses the end of the road; there is a wooden bridge for foot-passengers, but everybody prefers to cross the lines. On the other side of the rail is the first and main street in West Hartlepool proper; it turns at a right angle from the line we have followed, having the Murray Royal Hotel at the corner, with the Customs House next to it, and the Post Office close upon that: all substantial buildings, in a handsome, wide, well-paved street of good shops. Although the land is not of metropolitan value here, we see that the plan of underground kitchens has been adopted; and all inspection of goods in the shop windows is marred by the obtrusion of spectacles of people preparing or eating meals below. At the other end of this street, which is called Church-street, there is a cruciform church filling in the perspective effectively, the apse pointed to the centre of the street, to which we turn our steps, noting as we near it that it has for a background a set of boys, girls, and infants' national schools, with residences for the masters and mistresses at the return angles, all built in red brick. As we pass we have vistas of second-rate new streets, with neat bow-windows at every crossing, showing streets turning out of them again, of a third-rate character, yet mostly neat. At the corner of one of these transverse roads stands the Athenæum, two-storied, with a glass chamber on the top of it, and a stationer's shop entering into the pilastered composition of the ground-floor. Passing this, we begin to get a nearer view of the church. The plot on which it stands is polygonally enclosed with a low wall and iron palings, having a gate-post at every angle, of the same type as those at the entrance gates. The tall slim tower of the church is at the west end, eccentrically leaving a light pyramidal turret to crown the junction of the transepts. There are rose-windows in the transepts, and crosses in the gables over them, with anchors intertwined in them. The rest of the windows are lancets. There are no clerestories, consequently the roof comes down into sight: it is red-tiled, with a black diamond pattern upon it. In the interior of the church this eccentricity of treatment is carried to a greater length. A gallery is placed at the west end, supported by flat stone arches; the organ is in one of the aisles of the transepts, the font in another; and all the plaster-work is coloured a light grey. The details are all massive—the standards, for instance, are wrought of thick oak. The effect of this massive treatment, and the absence of height, induce an impression that it is almost necessary to stoop; and a certain gloominess, which, but for the relief afforded at the junction of the transepts by the skylight admitted through the pyramidal toweret and in the transepts by the rose-windows, would be serious. With the exception of these drawbacks, the design is very commendable, more especially when it is reviewed in connexion with its position. Opening from the church are the commencements of three new roads: one of them is a row of small villas, in which glass greenhouses have been brought into the composition of some of the front elevations.

There is an American air of a new settlement about West Hartlepool. Instead of being the growth of centuries, as most of our towns are, this has sprung up like a gourd. Some of the roads appear to have been scarcely trodden upon: in Scarborough-road,—a long double line of light, two-storied, bow-windowed houses, letting at 14*l.* a year,—the roadway is green with grass growing upon it. In Moseley-street the road is formed of stones in lumps so large that a century's traffic will produce little effect on them. A great many streets have been commenced, and but few finished. Builders appear to build on one side of a street, and then proceed with a side of a parallel street, leaving the front of the one to look upon the back of the other, and a piece of unoccupied ground, which is in every instance used as a drying-ground, between them. Thus Swanson-street consists of two houses; Raglan-place of two, with two opposite; and there appears to be no present intention of adding to the extent of either, as every indication of building has been removed. The waste plots are strewed with rubbish, and in most instances planted with props for hanging out clothes-lines. One of the smallest streets, with about a dozen houses in its length, perpetuates the highly unsanitary arrangement of no back windows. The backs of the houses are in one straight blank wall.

There are various chapels. A striking Congregational chapel, with schools beneath it, stands on an acutely-triangular corner open to three sides of streets, built in the Decorated style, with nave and transepts, and brick and stone spire, the windows being filled with imitation quarry glass; a Primitive Methodist Chapel of a less ornamental kind; and a Presbyterian Methodist Chapel adopting the traditional barn form, with large window-openings filled with rough plate glass. There is a theatre, too, which might be anything else as far as its purpose is marked in its façade—a vast blank, with a round arched entrance into it. Besides these, West Hartlepool owns another place of public resort—a large covered market, with inclosed cattle-market attached. These have been built on a scale which present appearances scarcely seem to justify. On the day we viewed it there were a fire-engine, two potato-stalls, two crockery ditto, one four-post bedstead, a half-tester, and a small second-hand iron bedstead, in exclusive possession of the whole market. It has an iron-rod roof, in the fashion of a railway station, and is paved with Anderson's asphalte. It is lined with small shops, and has for a centre a large round stone basin or trough full of water, which appeared to have had all the vegetables in the market washed in it. The cattle-market is not appreciated nor frequented by the neighbouring stock-rearers; and it has been planted with avenues of posts for clothes-lines, extending from one end of it to another; and the corners near the large, open iron-work entrance-gates has been made a retreat, probably by the board of health, for a disused travelling asphalte boiler and a road-scraper. Without the confines of the market are unbuilt-upon tracts, full of holes and covered with heaps of rubbish, on which idle men are playing rackets. In this Hartlepool, as in the other, many of the small houses are called hotels; and, round about the market-house, these delusive titles are pretty frequent. The Market Hotel, the Ward Jackson Hotel, the Commercial Hotel, are the size of ordinary public-houses; but the Durham Hotel is not larger than a small private residence.

Besides the districts described, there is towards the sea an older quarter, where everything is more worn out, and gritty and smoky. In this are situated Tennant-street, Ann-street, Mill-street, Hope-terrace, Newton-street, Marine-terrace, St. John's-street, Pilot-street, and Dock-street. They shelve down towards the shore, which is heaped up with large loose rocks. The sea glowers over a submerged forest, now and then casting up acorns and other tokens of the captives it has taken. A coal railway runs along the shore, at an elevation as high as the house-tops. Passing beneath this, the sea laps and laves the rocks at our feet. Jutting out upon them, and beyond them, is the main sewerage pipe of this new maritime town. It is always the case that in the old and well-populated districts of a town,—where everything is in hard wear, and constant traffic creates constant need of scavenging,—less is done for them by the local boards of health than for the prim, smart, newly-built quarters into which the well-to-do remove. As we have said elsewhere and often, such should not be the fact. The more dirt the more need of cleansing. Keep every poor street and every back-way scrupulously clean, and the example will be imitated by the householders.

To regain the ferry we take the opposite side of the docks to that we traversed on our entrance, and perceive from twenty to thirty red-brick Italian villas, so dovetailed into one another that, although in one row, some of them face the sea and others the harbour. A terraced walk, with a massive wooden balustrade, lies before those that look seawards, and the broad approach to the quay-side before those that face the harbour. These are the residences of a company of Scotch fishermen.

The railway station at West Hartlepool is built of sea stones, with rocky quoins and a timber roof. Although it is not in first-rate trim, it is in incontestably superior condition to that by which we leave Old Hartlepool, which is no more than a dirty brick shed, whitewashed inside, with a whitewashed, common carpenter's timber roof over it, open at one end. There are two lines of rails in it, with a platform, dangerously narrow, between them; and the general arrangement and accommodation of booking-office, waiting-room, and retiring-places are disgraceful, insufficient, and dirty.

The small new Cemetery buildings stand by the wayside as the train emerges from the station into the open coally country. They are enclosed with a bright red wall, with red copings, and are themselves bright red, being built of red brick. There is a square tower to the chapels; all the window openings are round-headed.

Such are the present conditions of the two Hartlepools, familiar by names to most people from the loud outcry sent thence for a harbour of refuge. The one is an old town, once a small fishing place, gradually developed by maritime commerce into consequence; the other, a new town brought into existence by the speculative enterprise and energy of one man,—Ward Jackson,—commenced on too large a scale in its main features, without a proper reference to the maintenance of decency and order in small things. A wide main street was planned, with a church at the end of it; streets were laid down at right angles with this new street, and an enormous market built; but details have not been considered. No house is provided with a yard large enough for any domestic purpose, the consequence is, that housewives are drying linen all day long at the street corners and in the market. And when the town comes to be better populated, this packing of back premises will prove a sanitary evil as well as an intolerable domestic inconvenience. We have spoken as gallant steersmen would—to guard good ships from wreck; to guide their course in a progressive direction based upon a proper regard for the social and sanitary welfare of the units whose combined industry makes the wealth of the land and of the seas.

THE NEW THEATRES OF PARIS.*

ALTHOUGH there may be points of difference in the lighting and ventilating arrangements, and Mr. About has even been assured that the conclusions of the report of the commission have been adopted for one building on the quay and rejected for the other, we are not able to discover that there is really any difference which can affect the accuracy of our present description, which moreover is helped by our own notes made at the new Théâtre Lyrique. The fresh air is there drawn from a shaft which descends in the garden of the square of Saint Jacques. The conduit, having an area of section of about 9 square mètres, passes under the Avenue Victoria to the basement of the building, where in winter the air will be warmed by two large *calorifères*. Thence, after passing through two systems of conduit, capable of acting separately or together, it is distributed to the *salle* by an opening in front of the *rampe*, or "float," and by a series of openings which exist under each "balustrade," or front of boxes. The quantity of air capable of being introduced by each of the two "systems," is calculated as not less than 30 mètres per hour and for each person of the audience. The air will have its final escape by the lantern in the roof, already mentioned. The description of the method of ventilating for which we are indebted to the *Moniteur* and other French journals, however, leaves the most interesting details, those requiring drawings for their adequate appreciation, unnoticed. Every part of the house, for example each separate box, is provided with its opening of escape, and its channel of passage for the bad air to the before-mentioned space in the roof where the lighting of the house is managed. Thus, the partitions between the boxes and the *couloirs*, or box-corridors, are almost entirely made up of square flues, each one of which is formed of plate-iron. These flues turn horizontally when they arrive above the ceiling of the house; and the whole of this part of the building, when we saw it in the spring, showed what an amount of contrivance must have been required in the formation of those numerous veins of circulation. The construction of the roof, both of that

* See p. 761, *ante*.

portion of the building which includes the lighting arrangements and ventilating flues, and of the other portion belonging to the stage, which is connected with many ingenious contrivances for support and working of the scenery, would deserve careful and detailed description. In the case of the circus or theatre opposite, the air is drawn from the bank of the Seine by a conduit passing under the quay; and one account in the *Moniteur* speaks of apertures of escape in the glazed ceiling or *plafond*. This surely would be a return to the old system.

The plans of the theatres of Paris, even the best of them, fall short of what we have strongly urged as the demands in buildings for the assemblage, for purposes of amusement, of large numbers of people; our advice and even predictions having been fully justified by events. Without recapitulating all that we recommended, we may briefly instance the completely isolated site; a separate entrance for each part of the house, or rather in a perfect plan, one for each price of admission; well-planned staircases; and exit-ways in excess of entrances, as amongst the objects to be attained. Drury-lane Theatre, as planned and as originally *worked*, is still the only modern building we know that approaches to such requirements. The Paris theatres, however, seem to ignore such demands altogether. The prices of seats are twice or three times as numerous as those in London theatres: the pit-corridor, for example, may give access to four or five kinds of places, including *baignoires* (pit-boxes), and *avant-scènes* (stage-boxes): eight or ten kinds of checks are issued at the same pay-place; you are directed to your proper place by the *logeuses* or box-keepers; and between the acts, you may quit your *fauteuil d'orchestre*, or *loge*, ascend to the *troisièmes*, and having duly wondered how people can live up there, or enjoy anything in a stifling heat as that of all the older theatres, you can descend again to your proper seat, if you have left only a handkerchief or bill of the play attached to it. There is no thrusting to get in; the police would prevent that; and indeed no one helps to make confusion, as do the various classes of ill and well dressed "roughs" at English places of amusement, going in and coming out. Planning, therefore, *may be* different, and less risk incurred. In the new theatres, even, an entrance-hall, which occupies the length of the front in each building, is common to nearly all parts of the house, as likewise is the *foyer* or saloon over it. The circus, or Théâtre Historique, however, seems to be better provided in the matter of entrance and exit ways than the other building. A covered way for carriages intersects the building, running parallel with the entrance-hall or vestibule, with which it is in direct communication.

The Théâtre Lyrique occupies an *emplacement*, or site, of nearly 1850 square *mètres*. An arcade, of five openings, forms the entrance from the Place du Châtelet, and gives access to the entrance-hall or vestibule, which is 25 mètres in length and 6 mètres in breadth. Thence leads the entrance to the pit, and thence ascend the grand staircases leading to the principal places in the *salle*, and others to the secondary places, which have staircases for exit communicating one south with the Quai de Gèvres, and the other north with the Avenue Victoria. In the Avenue is the entrance for the Emperor, who will ascend a staircase to his box. Cloak-rooms, pay-boxes, and other accessories, are attached to the entrance vestibule. The box-lobby or corridor, *couloir*, at each story, does not simply follow the curve of the *salle*, but may be said to take in the square angles, where, near the staircases, couches are placed. In an *entresol*, each side the *salle*, are offices of the direction and other rooms. On the first story above the ground story, and level with the principal tier of boxes, is the grand *foyer* or saloon, equal in dimensions to the vestibule below it, and having a small saloon at each end of it. The *foyer* is lighted by five large windows with balconies, and is decorated with the busts of celebrated composers. At the same level, next the quay, are five *foyers* (green-rooms), for singers, chorus, and dancers. Over the grand *foyer* is an open gallery, or loggia, from which a fine view is obtained. On the same level is a library and a room for copyists of music. A third and even a fourth story exist; and these stories contain a saloon for the secondary places, rooms for study of parts, workshops and stores. There are four tiers of *galeries* (this French word applied to theatres being used in its signification); and as usual, the *parterre*, or pit, extends under the first tier. One account speaks of an *amphithéâtre* (our "gallery"), as a further division of the house. There is still much difficulty in comprehending the divisions of a French theatre, so numerous are they, and so variously are they named, even after a recent order of the Minister of State, intended to improve the nomenclature. The boxes (*loges*) of the two principal tiers, have, to each box, a *salon* or ante-room; the lower tier has as usual a *balcon*; and the pit is surrounded with boxes, called in that situation *baignoires*. The dimensions of the plan of the *salle* have been stated at 20 mètres of length, and the same of breadth, with a height of 19 mètres from the floor of the pit to the centre of the ceiling; and the number of persons accommodated has been variously stated as 1,500 and 1750. The dimensions are said to be nearly equal to those of the Théâtre Français, the places in which are usually set down as 1,522. But, above the pit-floor, the two houses cannot be alike. In that portion of the *salle* which contains the *avant-scènes*, or stages boxes, there are no columns or projections which can impede the view. Indeed, the *scène*, or stage, is well commanded from all parts of the house. What we saw of the decoration of the boxes was in very good taste. White and gold were to be prominent, and the interiors of the boxes were to be red. The cove of the ceiling, around the large circle of light-diffusing glass, is decorated elaborately with allegorical figure-compositions in colour. These can hardly have the effect intended, considering the method of lighting. The stage has the same depth as that of the Opera Comique, and 7 mètres 50 centimètres greater width; but the depth is certainly less than would have been desired. One account gives the dimensions 25 mètres of width and 15 mètres of depth. But such figures in the case of a theatre, are insufficient for information unless marked on drawings; and these should include *all* plans and sections. The plan of a single story or tier, especially in the case of Continental theatres, must give erroneous impressions; and comparisons of the numbers accommodated on the lower floors of two *salles* which published plans represent to have the same area, will necessarily be fallacious, without it be said whether the back and sides of the pit extend under the boxes. One feature of the distribution of the French theatre is the great height of the interior in proportion to the length of the axis of the plan measuring from the curtain. This distribution is retained and indeed intensified in the Théâtre Lyrique; and the form and effect of the *proscenium* and curtain-opening, and the convenient accommodation of a large proportion of the audience, are not enhanced by it. In judging of the Continental arrangement however it must be recollected that the rows of seats in upper boxes or *galeries*, are few in comparison with those in our theatres, and that the gallery (*paradis*, or *amphithéâtre*) is of comparatively slight importance, and in some theatres may be found generally with only about a dozen occupants. All accessories of the stage, or machinery, in the Théâtre Lyrique are very complete.

It is part of that which is the merit of the French school of architecture, that it is in advance of the resources of written description; as we have often endeavoured to point out, real art will always be. Yet the correspondent of one of our contemporaries, falling into the manner of writing which is so general and so baneful, can speak of the new theatres as "innocent of any particular style of architecture," evidently believing that he has discovered something which is ground for reproach. We can neither name the *style* of the architecture of the best recent works in Paris by a word, nor find at hand designations of decorative features, as columns and window-dressings, that would otherwise than mislead. Even drawings must be to a large scale, and exceedingly well executed, to give the information desired,—considering, too, that much of the detail would be utterly naught in any other atmosphere than the clear one of the French capital.

In Louis Philippe's time, the Renaissance of François I., or Henry II., and Henry IV., was one of the styles in vogue; and the admirably-executed work of restoration, or rather completion, of the river-front of the old Louvre under Mr. Duban, after the Revolution of 1848, doubtless contributed to that taste for elaborate ornamentation, foliated and sculptural, which had commenced, and has continued to play so large a part in French architecture. With this influence worked that of the Gothic, always kept up in France by the restoration of the cathedrals; there are however few features of that style which any one, not a practised observer, would discover in the architecture of Paris; yet, they exist. With the true Renaissance, contributed the Greek, the sixteenth century Italian, and that of a still later period; the revived Roman of the reigns of Louis XV. and Louis XVI., and the Empire; and the true Louis XV. style, all, to make an entirely new style; of which the works of architects who, like Mr. Davioud, are generally connected with the municipality, may be regarded as the best exemplification. The architecture in which the Greek element most prevails, may be seen in some of the Mairies, of which we have given illustrations; and it is generally characteristic of the architectural scenery displayed on occasion of public *fêtes*, many of which temporary erections evince considerable taste. This latter variation of the French style approaches in character to that of the German Greek of Klenze, certainly remarkable for originality, and much of beauty, combined. Much of this character is exemplified in the base or podium, and doorcase, spanned by the great arch of the "Egress Gateway" of the Paris Permanent Universal Exhibition building, shown at page 768 in our last number, as well as in the dwarf pilastrade of the attic of the central entrance, shown on the page opposite, in the same number. The French critics sometimes speak of the manner as Etruscan; and it evidently gets some inspiration from architectural details on the vases, and from such remains as those of the Roman tombs of early date. Variations not to be thus described with a reference to the Greek, we can scarcely deal with descriptively, further than by saying that they are not Gothic, not Greek, and not any well-remembered manner of any Vignola, Sansovino, or Palladio. Perhaps the most tangible feature about them for present description,—other than the feature of richness in carved decoration, and that of the constant recognition of *sculpture* as an art forming part of the art-architecture,—is that of the very slight projection of everything of the nature of moulding. The cornice will be proportioned not to the height of the building, as it was where there were superimposed orders, by some of the best Italian architects; but it has scarcely the dimensions requisite for an upper order. A member, quite new to any English architects who have not travelled, is introduced above the cornice, and accounts for the slight projection. This member is the *chéneau* or decorative facing of the gutter, generally in stone, and always treated as a marked feature of decoration. It has very often a scolloped outline which places it in the same rank as decoration with the Tudor flower of late Gothic architecture, and with the Vitruvian scroll and *antefixæ* of the monument of Lysicrates. There are however, a considerable number of works in Paris, which are more or less reproductions of the Louis XV. style proper. They are chiefly detached residences. The architecture of the new theatres then, is not Greek, or Gothic, or Roman, or Cinque-Cento, or later Italian, or Louis XV., but is something of all combined, though not in the manner of features recognizable at once as taken from one or the others. Particular details in them are excellent, chiefly those which are in the ordinary sense of the term with architects, *ornamental* in character. Speak of ornament, sculpture, and panelling, indeed, and *porte-cochères*, and you have got very far through a summary of what constitutes the architecture of Paris; and it might well deserve inquiry how effect such as there is, can be produced whilst qualities of grouping and proportion are so largely deficient. In windows, and especially in doorways, Mr. Davioud has succeeded better than he has in either of the buildings on the Place du Châtelet; he has however, not, we think, produced better ornament. The best of this was originally accessory to two medallions, in the front of each theatre. These were in the coloured enamelled ware of Mr. Devers, similar to what he shows in the French Court of the International Exhibition. The heads in the case of the Théâtre Lyrique, represented Poetry and Music. We speak of these very creditable works using the past tense, since we last heard of them as about to be removed, as inappropriate for the situations. The carving about them of course would be left.

The Cirque, or Théâtre Historique, seems to have undergone many changes recently. When we saw it, the chief difference between it and the opposite building, other than in points of detail named in our last article, consisted in the greater length of the building of the Théâtre Historique, which allowed of greater depth in the stage,—for, differently to the Cirque Napoléon and Cirque de l'Impératrice, there is a stage,—and in the recession of the centre of the upper story in the principal front, whereby the angle-blocks have more the character of pavilions. The entrances and exit-ways and staircases also appear to be more numerous. The *couloirs* of the boxes appear to be nearly 4 mètres in breadth. The principal *foyer* has not less than 25 mètres length by 7 mètres breadth.

At each of its ends is a fine stone chimney-piece, "in the style of the Renaissance." In front of this *foyer*, or looking on to the *Place*, is the loggia. The piers of the arches, or reveals, seen from the Place, have an effect of thinness, which, if not amounting to one of insecurity, is still very objectionable. If columns could be arranged in face of these piers, inside the loggia, they would be seen from below, and the defect would be materially lessened. The interior of the loggia is decorated in fresco. Four statues representing Music, Comedy, the Drama, and History; elegant candelabra on the balustrade of the loggia; and groups of *genii*, decorate the front. Since the early part of this article was written, we have heard that important changes in some of the windows, have been made, intended to diminish the flatness of the south front. Over the principal *foyer* is another, which is preceded by a terrace.

The *salle* nearly equals in its dimensions those of the *salle* of the Grand Opera; and it will contain 3,000 persons, or many more than any other theatre in Paris. The old Cirque, or theatre, on the Boulevard du Temple, which would till lately, have contained the largest number, was generally estimated to hold 2,000. There are four tiers of *galeries*. The principal tier has a *balcon* and thirty-six boxes with ante-rooms. Each box has a sofa and eight leather-covered chairs. The lower tiers of boxes are supported by ornamental iron columns and arches, nine bays in number; and the corresponding spaces above are divided so as to form double the number of bays and arches. The second tier of *galeries* has five rows of stalls, and the third tier six rows; whilst the *amphithéâtre* has seven rows of seats. The stage, which is smaller in the opening than was the old Cirque, though otherwise as large as that of the Opera, is provided with annexes at the sides; and at the back of it is a large court lighted from the top, added to a store for scenery; by which extraordinary effects can be produced; the distance attainable from the curtain being 45 mètres. The arrangement in the *salle*, of bringing the ordinary sweep of boxes to the proscenium, without the decorative feature of stage-boxes, is considered to make the body of the house lighter in appearance. The decoration, consisting of flowers and gilding on white ground, is rich and elegant. The upper part of the *salle* is decorated with medallions, containing the portraits of celebrated monarchs; and it has been noticed that some of these heads are placed curiously, beneath inscriptions recalling their personal qualities or the circumstances of their reigns. Napoleon is associated with tragedy, Charlemagne with comedy, Cæsar with the drama, Alexander with vaudeville, Francis I. with *spectacle*, and Louis XIV. with the ballet. When the theatres were first opened, some dissatisfaction was expressed with the lighting,—rather, as we gather, with the management of it, than with the principle,—but these complaints seem to have subsided; and those which had reference to the subdued light, or *crépuscule* as it was called, of the house, when the curtain was raised, probably were without much reason. We must suspend judgment, however, and defer much matter of description till we can revisit the buildings and judge for ourselves. Meanwhile we may assist some of our friends in saying that the results of General Morin's researches up to April 1861, may be found in a publication separate from the "*Annales*" named in our last.* A letter from an English architect now in Paris, received since the foregoing matter was in type, says that, in one of the theatres, occupants of the *fauteuils* are troubled by draught; but that, on the whole, the ventilation is the best he is acquainted with. The ceiling-light, he speaks of as oval, and the glass as ground and coloured. Consequently, and without referring to another point noted in our last, the electric light could not be at present applied: experiments at South Kensington, lately, have shown that it has little power to pass through ground glass. There are some single lights under the projecting *balcon*, to light the back of the pit. The pit-floor has iron gratings; but the object of them could not be ascertained. The proscenium is surrounded by trellis-work, which seems to be for admission of air, for which the escape appears to be at the sides of the glazed part of the ceiling. The *rampe*, as we feared, conceals the feet of the actors. The stalls, our informant says, are the most uncomfortable he is acquainted with. They "have seats placed on a centre; and to allow a person to pass, you *must* get up, and your seat follows you." Some of the French journals call the Cirque, Théâtre du Châtelet.

As to the Théâtre de la Gaieté, the new building in the Rue du Caire, near the Square des Arts et Métiers, opened in September, we must confine ourselves almost to description which we find in the French journals, our recollection of the unfinished building not extending beyond the crowning feature of the front, a large segmental pediment like that of Temple Bar, which as blocked out, did not promise well. The interior, however, seems to be judged of favourably, at least in the decoration and in the lighting, of which we have already spoken. The lower story of the front is an arcade of five openings. Four of these give access to the grand vestibule, whence two staircases ascend to the *couloirs* or box-lobbies. The *salle* has four tiers of *galeries;* and the stage is said to be well seen from every part. If that be no exaggeration, the form of the *salle* must be vastly superior to that of any French or English theatre that we are acquainted with. There are six staircases, namely two for the *amphithéâtres* and four for the other places. The seats of the *fauteuils d'orchestre*, on the occasion of the inauguration, were found much too close. The fault is very general in French theatres. The *loges d'avant-scène*, or stage-boxes, in this theatre are retained as a distinct feature of effect, being decorated with gilt shafts which are surmounted by statues. Several of these boxes have a *salon*, or ante-room, with a divan, fireplace and mirror, besides a window. A *foyer*, or saloon, to each of the two principal tiers of galleries, forms a feature of the plan. The chief of these saloons appears to be very elaborately decorated. Five bays on the side next the *salle*, correspond with five windows of the front; the piers have detached Composite columns carrying archivolts, the spandrils being, as we understand, enriched with medallions. The central bay is richly decorated as the chief entrance; and the other bays form openings to the box-lobby of the first tier; moreover, above, there are balconies from the lobby of the second tier, so that the occupants of these boxes can, between the acts, look down into the principal saloon. This feature is a not uncommon one in French theatres; and it is very favourable to effect. The portraits in the medallions are those of Beaumarchais, Shakspeare, Molière, Schiller, and Regnard. They are by Mr. Jovet Duval, who executed also paintings on the ceiling, friezes, and other parts of the saloon, the effect of which in colour and gold is described as very rich. The chimney-pieces, one at each end of the saloon, not finished at the date of our account, appear to be treated, or as to their mirrors, in a novel manner of decoration, including the arms of cities on a gold ground, and friezes representing one Melpomene in a tragic scene, and the other Terpsichore in a bacchanalian. At the angles of the saloon are allegorical figures. The saloon above, belonging to the second tier of boxes, is still we believe in process of decoration by Mr. Duveau. A large composition will represent the famous Nicollet and his primitive company, and a crowd of actors in costumes of the pieces, more than two hundred, played at the old theatre; the ancient boulevard "du Crime," latterly "du Temple," being in the distance.

The ventilation is said to be on the same system as that of the theatres of the Place du Châtelet; but this is not quite clear, since the *lighting*, stated to be the invention of Mr. Cusin, the architect, is described as somewhat different. The lighting indeed is from the top of the *salle;* but the account would seem to describe a sun-burner with drops of cut-glass, and several lustres as satellites to the centre of the system, rather than the system of exclusive lighting proper, which seems to us essential to the working of General Morin's ventilating arrangement, and to obviate the recognized inconveniences, referred to in our last, of the central chandelier or *lustre*. But we must wait for precise particulars. We read however of other light-distributing arrangements, in the form of a series of arches, glazed, at the springing of the vault or ceiling of the *salle*.

The alterations to the building of the Théâtre Français, consist chiefly of a new south front, returning the Tuscan or Doric colonnade and general architecture adjoining, of the Palais Royal. From the new gallery thus formed, will open various dependencies of the theatre. Above is an order of Composite pilasters, an attic-story, and a balustrade crowned by vases and trophies, and a mansard roof; and many of the features, as the lintels of windows, and the consoles, are much enriched. Mr. Chabrol, "Architecte de la Couronne," and architect for the Palais Royal, has had the conduct of the works.

At some future time, in returning to the subject of the Paris theatres, we may give some account of the design and works of the new Opera-house. The grand hotel, and many buildings surrounding the site, are completed: but the architecture of them is inferior to what the French can produce.

Whilst on this subject, we would express regret that Mr. Barthelemy's drawings of his proposed improvements in the arrangements of theatres, which are in the Western Annex of "the Exhibition," are so placed that it is impossible to examine them properly. They are not inviting in appearance; but, knowing that there was value, or at least suggestiveness, in Mr. Barthelemy's proposals, some of which he has carried into effect in France, we endeavoured to possess ourselves of the useful hints, but were at length obliged to give up the attempt, as we have been in like manner in the case of much useful matter which we know to be in the collection now to be dispersed, and we fear, after little use, of the sort intended by its promoters and well-wishers, made of it.

* "Etudes sur la Ventilation." 8vo. pp. 79. Paris. Imp. Bourdier et Cie. [Extrait des Annales du Conservatoire des Arts et Métiers." Avril, 1861.]

SKETCH OF THE HISTORY AND PRESENT PRACTICE OF MEASURING ARTIFICERS' WORK IN GLASGOW, WITH STATEMENT AND COMPARISON OF DIFFERENT MODES OF ESTIMATING.

It would form an interesting and instructive study to trace the history of mensuration, as applied to the work of artificers; and it is believed that the materials for such a history are in existence, as there have been upwards of sixty works published on mensuration, besides a profusion of treatises on weights and measures, price lists, builders' tables, school-books, and other publications relating more or less directly to the subject. The first British treatise on mensuration of which I have found any notice was published in 1556, about twenty years after the Bible was printed in England; and succeeding works have appeared at short intervals since.

Mensuration, as a profession (if I am not mistaken it is called the art and science of measuring, in apprentices' indentures), has attained its present proportions by slow and gradual steps: it has been so materially affected by locality, and by the different substances used in building, as to form a very diffuse and ill-defined system. The influence of individual members of the profession must also have had considerable effect on the practice, although no name stands out with so much prominence as to stamp its peculiarities on the existing state of things. It may be worthy of notice, however, to observe that among those who have shed lustre on the profession are Palissy the Potter (with the circumstances of whose romantic life many of you must be familiar), who, while prosecuting the researches for which he has become so celebrated, was frequently employed as a measurer or surveyor; and the Shakspeare of mechanics, the illustrious James Watt, who, in our own city, less than a hundred years ago, while occupied with his manifold inventions, was also occasionally engaged in measuring artificers' work. The profession did not reflect lustre on him, if Arago's opinion is to be received, which is:—

"We see, in fact, the creator of an engine destined to form an epoch in the annals of the world, undergoing without murmur the indiscriminating neglect of capitalists during eight years, lowering the lofty powers of his genius to the getting up of plans, to paltry levellings, to wearisome calculations of excavatings and embankings, and courses of masonry."

I have made efforts to procure copies of some of Watt's measurements, but hitherto without success.

The following is a copy of his probable estimate for a quay wall at Greenock. It is dated Glasgow, 9th December, 1773:—

"For the hewn stone in the facing, average length (1.8) 105 cube feet, at 4d.	£1	15	0
For the capping long stones quite across the wall, 13½ feet (supl.) at 5d.	0	5	7½
For the rubble stones, and leading 5½ yards, of 2 feet thick, at 1s. 3d.	0	6	10½
Building hewn stone and rubble, 12⅔ yards, of 2 feet thick, at 1s. 2d., that is, 42s. per rood	0	14	4½
Total expense of stone work, per running yard, casting the foundation, and drainage	£3	1	10½

The wall was to be 15 feet high, 7 feet thick at the bottom, including scarcements, and 4 feet thick at top."

The importance of the subject under consideration will be apparent from the frequent dependence of architects' designs on quantity and cost, besides the fact that to the measurer of Glasgow is entrusted the arrangement of tradesmen's accounts, amounting, on the average, to nearly a million a year. It is creditable to the intelligence and the integrity of the profession that, amidst the diverse interests at issue, and the multifarious questions

which, from the nature of things, arise in the transaction of such a mass of business, the disputes which are referred to courts of law or to other external arbitrement, are very few in number.

Mensuration is geometry applied to practical purposes; and, so far as it forms the subject of this paper, may be defined to be the art of taking dimensions from plans and from the actual work, and computing the quantities of all things connected with buildings of every description, together with the adjustment of the value of these quantities from the tradesmen's prices, as fixed by contract.

In former times the ordinary method of valuing artificers' work, even in extensive undertakings, was to have the work measured when it was completed; and the tradesman attached the rates himself, occasionally guided or assisted by the measurer. Sometimes a list of prices was fixed before commencing the work; but frequently there was no agreement as to rates, so long as the population of the city was comparatively small, and the tradesmen were few. These simple arrangements appear to have wrought satisfactorily, guided by the Dean of Guild Court, which was instituted in 1605, and to which was entrusted all disputes betwixt merchants and craftsmen, and all questions about weights and measures.

It is worthy of notice that, so recently as 1815, a new mode of measurement for mason-work was sanctioned by the Dean of Guild Court and the masons of Glasgow, but it never came into general use.

Contracts by slump sum were occasionally made throughout the country, and probably in Glasgow also. As an example, we have the melancholy case of Nasmyth, a builder in Edinburgh, and grandfather of the landscape painter of that name, who, in 1712, contracted with Government to build a fort at Inversnaid; but having with two men been deforced by Rob Roy and his followers, and exposed to the storms of winter without shelter of any kind, was not only ruined from failure to fulfil his contract, but died shortly afterwards from the effects of the violence to which he had been subjected.

Towards the end of last century, the natural resources and advantages with which our city is favoured, together with the extending trade with America, gave immense impetus to the growth of the city; and the arrangements for measuring and valuing artificers' work gradually became better defined as buildings rapidly increased in number.

In the earliest years of the present century estimating by lists of prices was frequent: then came estimates similar, but simpler, to those of the present day. Year by year these became more numerous; although, in 1812, as we learn from the circular of a measurer commencing business, which bears that "he had great experience in measuring all kinds of artificers' work, and is able also to measure plans and prepare estimates" (I am quoting from memory), it may be gathered that preparing estimates was then a subordinate branch of the business. Prior to 1820, many of the specifications, explicit enough in other respects, made no provision whatever for estimating; while in others of the same period were clauses as follow:—

"1812. The estimate to be either by slump or by measure, as the proprietor may think proper."

"1814. Should any alterations or additions be made by the proprietor, which may either increase or diminish the contract price, the same to be paid for, or deducted by measure, as the case requires."

"1816. The estimate is to specify a slump sum, for which the whole work is to be executed and finished agreeably to the plans and this description, together with prices by the rood, yard, &c.; and should any alterations be made by the proprietors, which may either increase or diminish the slump sum, the same shall be fixed and settled by the said contract prices. The price will be punctually paid by reasonable instalments as the work proceeds."

There is reason to believe, that to the measurers who were practising in this city during the first twenty years of the present century, and to the influence of the tradesmen then in business, is owing the system of estimating which prevails to this day.

In the Glasgow Directory of 1810 are the names of four measurers, only one of whom, so far as I am aware, is now living, the venerable and respected Mr. Donald Macintyre, in whose office I made acquaintance with the business, and from whose books I have recently gathered part of the information now given. To the Glasgow Architectural Society it may be interesting to know, that in 1810 there were seven architects practising in the city (one of them had his office in Bridgegate); and that twenty-one years later, while the measurers had scarcely increased, the architects had doubled their number, and the seven of 1810 were all still in business.

In the Directory of 1831, there is an ordained measurer, a title which has never been general in Glasgow, although frequent elsewhere. The formula for ordination consists in undergoing an examination on the theory and practice of mensuration, and the successful candidates are rewarded by a diploma. It might be a question for the profession in Glasgow to consider whether something of the kind might not be useful.

It would be impossible within the limits of such a paper as this, to refer with any degree of minuteness to the *mode* of measuring the various kinds of work, and to those conversant with the subject, lengthened detail is unnecessary: a few remarks, however, may be allowed.

In regard to mason work, a very loose system of measurement was in general practice previous to 1840. Here are specimens (from a schedule in 1835:—

"2-feet droved ashlar front wall, with polished window-dressings, corners, base, cornice, and blocking, per elevation. (The rate, 16*l.* a rood.)
2-feet rubble walls, with droved dressings. (The rate, 7*l.* 10s. per rood.)"

In 1840 appeared the rules and regulations for the measurement of mason work, which are at present in general use; but after a brief trial they were again superseded by the preceding system, which maintained its sway until 1853, when it was finally abolished.

The rules and regulations now in force are a great improvement on the old system, yet they are not perfect by any means, and are occasionally the subject of dispute from the different meanings attached to some of the rules. An attempt was made some years ago to make alterations on them, but it did not succeed.

As to carpenter work, it may be observed that the method of charging rough timbers of buildings, such as joisting and roofing, by the square yard, is not strictly accurate, as the first joist or spar is partly additional to the quantity. The method of reporting joisting and roofing by the lineal foot, which is in vogue in some places, is free from this objection; so is the system of rating them by the cubic foot, as is occasionally done in the case of bound roofs.

In the measurement of other departments of building operations there does not appear to be anything calling for special remark; and in regard to the Glasgow mode of measurement, as a whole, it is satisfactory to note that, for a number of years past, the tendency has been to state things exactly as they are; and by dispensing with allowances, measure and half, double measure, and the like, to report quantities correctly and explicitly, leaving the difference in workmanship to be determined by differences in the rates. Besides being just in principle, this method has the advantage, by removing the elements of chance in offering, of ensuring closer estimates. The practice of reporting quantities by the measure, or denomination in which the materials are sold to the tradesmen, has also been more general.

At the present time, the ordinary course of procedure by a measurer in regard to estimated work is somewhat as follows:—

His duties commence by receiving the architect's instructions, which almost universally form the substitute for the specification of former times. From the plans and these verbal instructions—or written specification when there is one—the measurer prepares detailed estimates of the several works required in the erection: besides their legitimate purpose, these estimates are generally made the specification, or description of the manner of executing the work. As architects frequently desire to have the schedules so framed as to provide for the cost of extra work, the practice of increasing the net quantities is general. Copies of the estimates—technically called schedules—are issued to the tradesmen, to be filled up by them as their offers. Occasionally there is some discrimination employed in selecting the tradesmen, so as to have them somewhat equal in standing and respectability; but frequently highly respectable men are called to compete with inferior tradesmen. In the absence of any reservation to the contrary, custom has constituted it a breach of faith to accept an offer which is not the lowest.

Before the offers are accepted, it is occasionally the practice to send the schedules to the measurer to be examined; and it is desirable to have this done in all cases, as at present the measurer frequently does not see the accepted schedule until the work has been executed and re-measured; and, as it is his duty to make this examination, and to correct the extensions and summations, if they are erroneous, it sometimes happens that a considerable per-centage is added to, or deducted from, the offer, to make it correspond with the rates.

As this statement will not be quite explicit to some, an illustration may be allowed. Take the case of two offerers filling up schedules for the same contract: the first has his calculations correct, and his offer amounts to 500*l.*: the second has his calculations underrated to the extent of 20*l.*, and his offer is 490*l.*; consequently he obtains the work, his offer being lowest. It is obvious that the second offerer's rates must be higher on the whole than those of the first offerer; yet his offer is 10*l.* less, and he would be paid only 490*l.* if his estimate were final. When the remeasurement is prepared, adopting his rates merely, he would get better prices for his work than the first offerer would have done if he had executed the work; and it may be said that he lost the contract because his rival was a bad arithmetician: consequently, justice requires that the 20*l.* of errors should be deducted from the measurement.

The converse of this case would be an offerer overstating his calculations to the extent of 20*l.*, and yet his offer is the lowest; when, for the same reason, that sum would require to be added to the measurement in awarding justice.

The misconceptions which prevail on this subject will be my excuse for referring to it at length.

The lowest offerers having obtained the contracts for the several works, are forthwith instructed to commence; and, as the erection is proceeded with, the measurer is called from time to time to take the dimensions of such portions as may be about to be covered up, or may become inaccessible; and, at the completion of each contract, he takes all the dimensions which are necessary for preparing a detailed measurement of it, except in the cases where the estimates are held to be final. The whole dimensions of every portion of the building, and of every department of work contained in it, are taken; although, as is frequently the case, the area, the height, and the general arrangement of the building remain unaltered, and the deviations from the plans have been trifling. The measurer may, therefore, be considered as performing, very inefficiently, however, part of the duties of the clerk of works.

When the dimensions of each department have been taken, the final measurement is prepared, the calculations of the quantities made, and the rates in the estimate attached. If the estimate provides for everything which has been executed, the measurement is completed, and sent to the tradesman, to be by him rendered as his account. If, as much more frequently happens, there has been work done for which the estimate does not provide, the measurement, with the estimate rates attached, is sent to the tradesman for the prices of the extra work; and, when these are obtained, the measurer compares these extra rates with the estimate rates, makes them conformable so far as he can, and then completes the document. When the tradesman gets the completed measurement, he renders it to the architect, who makes such a comparison of the measurement and estimate as enables him to certify that the measurement is correct.

Such is a brief outline of the practice of measuring artificers' work in Glasgow. Its prominent features are these;—its flexibility in permitting the arrangements for the erection of a building, such as the plans, the details of the parts, and style of work to be determined as the erection is proceeded with; its apparent justice to both parties, in providing that the proprietor shall pay only for the work performed, and that the tradesman shall be paid for all the work which he executes; its uncertainty to both parties, the measurement frequently amounting to a larger sum than the proprietor anticipated, and occasionally to less than the tradesman expects; its tendency to degrade the estimate from the gravity of a covenant, and to make it merely the instrument of procuring work, which, in the hands of unscrupulous tradesmen may be taken on unremunerative terms in the expectation that the re-measurement will afford them opportunities for increase; its expenditure of time in re-measuring the work and in adjusting and examining the accounts to the annoyance and injury of the tradesman. The fallacy of supposing that equal amounts in offers by different tradesmen represent the same value in materials and work is perpetuated by the acceptance of the lowest offers of tradesmen competing, without being selected: this practice, although not confined to Glasgow, is more prevalent there than elsewhere.

For the purpose of comparison, this system may be called the Glasgow system of estimating.

The system of estimating which, in various forms, prevails throughout the empire, with the sole exceptions, so far as I can learn, of Glasgow and the places influenced by it, is to make the estimate final, and to have no re-measurement of

the work after it is executed, excepting in the case of alterations on the plans or mode of execution; and then the re-measurement is confined to the work which has been altered.* There are different methods of preparing the estimates for this system. In some cases the plans and specifications are given for a day or two, each to a number of tradesmen, from which they prepare their own offers. This method is decidedly objectionable, and is the cause of the great discrepancies in amounts of offers by it. A reference to the lists of competitions, where the quantities are not supplied, which appear in the weekly journals devoted to building interests, will show this. In some places, where measuring does not form a separate profession, the estimates are prepared by the architects themselves; and in some places, where there are measurers or surveyors, the practice is for the proprietor to choose one measurer, and the tradesman whom the proprietor has selected to offer choose another, and the estimates are prepared betwixt them. Throughout Scotland, however, in the places where there are measurers, the estimates are prepared as in Glasgow, with the fundamental difference that there shall be no re-measurement when the plans are thoroughly matured and an explicit specification accompanies them. Accurate estimates of the different works can be prepared, but in the hands of an unscrupulous architect (it is to be hoped there are not many such), who purposely conceals or misrepresents, the contracting tradesmen may be injured.

The salient points of this system, which is generally known as that of slump sums, and from its extensive application may be called the national system, appear to be these:—

Its inflexibility, in requiring that all the arrangements for the proposed building shall be fixed and determined before the estimates which form the tradesmen's offers are prepared.

Its obviating delay in the settlement of accounts.

Its unison with the spirit of the age which requires definite and fixed contracts.

Its means of acting prejudicially to the tradesmen by a dishonest architect.

The chief argument employed in favour of the Glasgow system is, that the remeasurement, being a measurement of the actual work, is more accurate than a measurement from the plans can be: when the difficulties which occasionally occur in obtaining a correct re-measurement, and the chances of error in preparing it, are considered, the probabilities of accuracy, on the whole, appear to be in favour of the national system, assuming that the measurements under both systems are prepared by competent parties.

An important argument in favour of the national system is, that by its adoption uniformity would be produced; and in these days of rapid travelling and extended intercourse, it is desirable that the same rules should be of general application, so that architects and tradesmen together may be placed on an equality with those of other places. Any hope of extending the Glasgow system beyond its present limits appears to be utterly futile.

Comparing the two systems together, and assuming that in all cases it is necessary to have the plans matured, the following propositions are submitted for consideration:—

1. If the building has been erected according to the plans and specification and a carefully prepared estimate, any re-measurement is unnecessary.

2. If the deviations from the plans have been slight, a re-measurement of the differences only is necessary.

3. If the deviations from the plans have been extensive, involving an entire re-measurement, the present system, as administered in Glasgow, is frequently liable to abuse.

These propositions being granted, the national system of estimating is entitled to the preference.

The liability to abuse just referred to consists in the advantage occasionally taken by tradesmen to obtain higher prices than their estimate warrants for extra work; and, while it is the measurer's duty to see that the terms of the offer are strictly enforced, it is sometimes impossible, from the nature of the alterations, to have this thoroughly accomplished. It the practice of causing the measurer to decide all questions of extra rates became general, this difficulty might be remedied; but the increasing dislike of proprietors to uncertainty in the cost of their buildings, and to the excess which so often occurs on estimates, is tending to bring into disfavour the Glasgow system of estimating; which, to the architect, has the advantage of leaving him unfettered.

In the mean time, it is worthy of note that the use of the national system is advancing in Glasgow, and that year by year the contracts made under it are constantly increasing in number.

A few questions are given, the consideration of which may assist in the solution of the subject, viz.:—

Which of the systems is most just to all the parties concerned?

Under which system are disputes and misunderstandings most prevalent?

Have tradesmen, on the whole, been gainers under the Glasgow system?

Has architecture been benefited by the Glasgow system of estimating? or has it been injured by the national system?

In regard to the tradesmen, it will be generally admitted that, in proportion to the ability displayed and the capital employed in the execution of artificers' work in Glasgow, they are not properly remunerated; and that looking back over a series of years, they have scarcely maintained their position. The excessive competition which prevails does not sufficiently account for these facts.

Neither of the systems of estimating which have now been considered will assist in restoring architecture to its true position as one of the fine arts. If the architect is to be considered as an artist, it is obvious that the design, with its manifold details, must be the result of much time and study, and must proceed with the erection of the building, and so render estimating impossible; but as the Lamp of Sacrifice about which Ruskin discourses so eloquently is now burning dimly, and is threatened with extinction by the suffocating fumes of utilitarianism, it is to be feared that the opportunities for erecting buildings as works of art will be few and far between. The great work of the erection of St. Paul's, for instance, was carried on by Sir Christopher Wren as architect, assisted by a surveyor, a clerk of works, and a clerk of the check, all at yearly salaries; Sir Christopher's being the moderate sum of 200*l.* a year.

The national system of estimating will yet prevail in Glasgow; but if the prediction should prove erroneous, there remains the alternative of the creation of a class of persons who shall be manufacturers of buildings; who shall give plans and erect buildings quite independently of rules of art; and whose advent shall be distinguished by the overthrow of architects and measurers and tradesmen, as they at present exist.

If the length of this paper should be among the objections which may be made to it, I have to say that it has been required a month before it was due, and would plead the excuse which Pascal made for his sixteenth letter, that I have not had time to make it shorter.*

* The drains, underbuilding, and other portions of the erection which may be affected by site, nature of foundation, &c., or any other matter regarding which uncertainty prevails, being usually re-measured when executed, and valued by the estimate rates.

* Read by Mr. John Shields, at meeting of the Glasgow Architectural Society, as mentioned in our last.

SURREY ARCHÆOLOGICAL SOCIETY.

THE ninth annual meeting of this Society has been held this year in the neighbourhood of Lingfield and Crowhurst. The excursionists met at the Godstone Railway Station, and thence went to Crowhurst. The first object which gained the attention of the party was the ancient yew-tree, supposed to be the oldest in England. It was mentioned by Aubrey, in the reign of Charles I., as measuring in his time about 10 yards round, at 5 feet from the ground. Its present girth is about 33 feet. They found, on a framed, written description near the tree, that its age was computed by Humboldt, on the authority of Decandolle, to be about 1,450 years. The same author gave the ages of the following:—

Brabourne Yew, in Kent (supposed to be dead)	3,000 years.
Fartingal Yew, in Scotland	2,500 ,,
Crowhurst Yew	1,450 ,,
Ripon Yew, in Yorkshire	1,200 ,,

The Crowhurst Yew was hollowed out about 1820. In 1845 the upper branches were blown off by a great storm. A cannon-ball was found in the centre of the tree when hollowed out in 1820. This ball was exhibited to the company. In the inside of the tree there is room sufficient to accommodate six persons comfortably seated. Mr. George Russell French gave an account of the church and its monuments. After which the party visited Crowhurst Place.

This fine old moated house was opened for the inspection of the members of the Society by permission of Mr. William Borer, M.D., who resides there. The party entered by crossing the moat by means of a wooden bridge, passing through the washhouse, which, in all respects, as regards its wide open fireplace; a wood fire with the sticks resting upon "dogs," &c. &c., carried one back into the Middle Ages. The company proceeded onwards to the kitchen, once the ancient hall. Here a paper was read by Mr. Charles Bailey, who commenced by stating that, as a general rule, whenever our ancestors were about to build, they adapted to their use the materials most ready to their hands. They were therefore not surprised to find in this part of the country so many of the old domestic buildings constructed for the most part of wood; for in the fifteenth and sixteenth centuries the wealds of Surrey and of the adjoining counties of Kent and Sussex were covered with vast forests of timber, and chiefly of oak. The English manor-house and the houses of the better classes of the yeomanry and gentry of the southern districts were very simple in plan, and often exhibited a singular uniformity of design. The lecturer then described in detail the mode of building such houses, mentioning the internal arrangements as regards the number and position of rooms, doors, windows, &c., and pointing out their leading characteristics generally. In speaking of the carved Gothic tracery and foliage with which these old relics of antiquity were elaborately adorned, he said the only examples now remaining were at Crowhurst-place, Ightham, and the old house at Penshurst. The covering of the roof varied according to circumstances. The most humble covering was a thatch of straw, and was often used. Tiles of burnt earth were much used in Kent. In Surrey and Sussex they used flakes of a stone, which easily cleaned, and was known by the name of Horsham slate. Mr. Napper, of Guildford, said quarries at Horsham were still in existence, and the stone was used in the present time for various purposes. Mr. Bailey said that stone was still to be found in many of the old houses, and made a very excellent covering when properly laid on.

Starborough Castle was afterwards visited, and here Mr. G. R. Corner, F.S.A., read a paper on the castle; the company having assembled for that purpose in the room of a building (within the moat) erected with some of the fragments of the old castle by Sir James Burrow. Mr. Corner's observations included a brief account of the history of the castle; showing that it was once garrisoned; being occupied by the Parliamentary forces. The castle appeared to have had a round tower, with a dome at each corner, and a court in the centre. The drawbridge was shown. Exclusively of the moat, there was half an acre and some square pools of ground.

After the company had visited Lingfield Church, the annual meeting was held in the school-room at Lingfield; Mr. G. L. Gower, president, in the chair.

The President, in his address, said such societies as the present had done much good in the archæological world. There was ample ground for research; and much light had, through their instrumentality, been thrown upon many obscure points in the history of our country, and the scenes so familiar to our forefathers. It was too much the custom throughout the Georgian period to look with contempt upon science; when, it would be remembered, churches and chapels were built and restored by such and such "churchwardens." The latter, fortunately for the society of the period, never forgot to hand down their names; so that posterity could learn to whom they were indebted for many instances of vandalism and bad taste. To such functionaries might be attributed the removal of the beautiful old carved oak, to make way for ugly substitutes. But conceit and ignorance would always be found together. These societies must, therefore, be highly beneficial in preserving the relics of antiquity yet left to them. He was glad to see so many ladies present; and to them he would say that many precious relics had been preserved by means of a lady's pencil.

WORKMEN'S VISIT TO INTERNATIONAL EXHIBITION.—On Thursday last Mr. Richard Thomas, builder, of Circus-road, St. John's-wood, treated 200 of his workmen to a visit to the International Exhibition. The men, with their wives and children, were also handsomely entertained in the refreshment department of the building at the cost of their employer. They were conveyed to and from the Exhibition in omnibuses. Well done, Mr. Thomas.

NOTES UPON SOME NORTHAMPTONSHIRE ANTIQUITIES.*

The county of Northampton teems with localities and objects of antiquarian interest. Going back to the earliest historic times, we find that, previous to the arrival of the Romans, this district was inhabited by an ancient British tribe, called the "Coritani," "Coritavi," or "Cor-Iceni," which tribe was subordinate to the "Iceni," the great tribe of the Eastern Counties. The presence of this pre-Romanic people at certain spots is marked by the occasional but rare discovery of implements (whether of warfare or of domestic use) wrought in flint, vessels of coarse pottery, and coins—the last of a peculiar character, and unlike any found in other countries. Some of the ruder flint implements are possibly the relics of a still earlier or pre-Celtic race—of a people of whom we have no historic knowledge whatsoever.

Peculiar hills, usually conical or semi-conical in form (the natural elevation of which has been generally artificially increased), occur throughout the county. Some of them were undoubtedly occupied by the Britons for offensive and defensive or for religious uses, and, with others, were subsequently used as military posts and fortifications by the Romans, the Saxons, or the Danes. Danes' Camp, and Clifford Hill, near Northampton; Burrow Hill, near Daventry; Gawburrow and Thornburrow Hills, near Brington; and the Toot Hill, at Peterborough (the last probably entirely of a religious origin); will readily occur to memory as examples.

Not many weeks ago, in making a cutting for a new road upon the estate of Beriah Botfield, esq., M.P., at Norton, near Daventry, the workpeople found a skeleton, and with it an urn and a flint implement. Accompanied by the Rev. H. L. Elliot and Mr. Irvine, members of our local antiquarian committee, I last week drove over to Norton. We found that the material through which the cutting is carried is a loose sandy gravel of a late geologic period: this is covered by from 12 to 18 inches of surface soil, which, in the wall of the cutting, at the spot where the remains were found, dips into the gravel about 2 feet; a similar dip being observable at a little distance on the other side. It is evident that a trench had crossed diagonally the line of the present cutting. In the bed of this trench the remains had been deposited, and the trench then filled in.

Mr. Botfield informs me that the skeleton has been interred in Norton churchyard, and that the urn is deposited in the museum of the Society of Antiquaries at Somerset House. The flint implement, which is in the possession of Mr. Taylor, jun., of Northampton, is to-day exhibited by him, who, I believe, liberally intends to deposit it in the future county museum.

Mr. Botfield, himself an eminent antiquary, has kindly informed me that the urn, which I have not seen, is Early British, and precisely similar to urns of the same period found in tumuli at Burrow-hill and elsewhere.

Through the kindness of Mr. Taylor, I have had an opportunity of having a drawing of the implement made, exhibiting both sides and the edge.

This drawing I forwarded to Mr. John Evans, a prominent member of the Society of Antiquaries, and a great authority upon this class of antiquities. Mr. Evans describes the implement as a "spear-head or dagger, of a class of weapons which, though not common, have been found in various parts of England," and "which certainly belong to the so-called 'stone period,' and probably to the latter part of it, where the use of stone overlaps, as it were, the use of bronze." A period, I may remark, which was probably long anterior to the Roman invasion.

This body was evidently buried without burning. The urn might have been of a religious character, or simply a vessel ordinarily used by the deceased. The flint "spear-head or dagger" (perhaps of his own manufacture) was probably his customary weapon, and might have had a two-fold use, and been applied also to purposes not warlike.

During the Celtic period, both burying the dead and burning the dead were contemporaneously practised by different tribes; but there are reasons for concluding that burying the dead without cremation was the more ancient custom.

A flint implement (perhaps an axe) is exhibited by Mr. Bass, of the Market-square. This implement, which is of much later date than that from Norton, was found in Thrift-street, near the County Asylum, about 4 feet below the surface, on the 8th May, 1855; it is of extraordinarily fine workmanship, and much resembles the smoothing stones used in ancient Roman potteries.

Some years ago, an ancient British gold coin (afterwards deposited in the British Museum) was found at Ecton. This coin had a horse on the obverse, and on the reverse the letters "A. N. D. O." It belongs probably to a date somewhere about the period of the first Roman invasion,—perhaps the last century before Christ. Another British gold coin, of a kindred type, but without any lettering, found in the churchyard at Earl's Barton, I believe during last year, was exhibited at the first meeting this year of the London Numismatic Society. The occurrence of this coin in such a spot induces me to mention suggestively an impression I had previously entertained—that, in some instances, our modern Christian churches may occupy the sites of Roman Pagan temples, which themselves had been built upon sacred spots of the still more ancient Druidical worship,—a succession and a transition which, if proved, must have a twofold interest to every Christian antiquary.

The Romans came to Britain in 55 B.C., led by Julius Cæsar, who landed (as calculated by Halley, the astronomer, from certain lunar cycles) on the 26th of August in that year. They made no permanent footing in this country, however, nor penetrated so far as this county, until the reign of Claudius, a hundred years afterwards. From that period until their final withdrawal, in the reign of the Emperor Honorius (about A.D. 420), the history of Northamptonshire is inseparably mixed up with the history of the Roman career in Britain.

This part of the history of the county was treated most ably and at length in a lecture upon "Roman Northamptonshire," delivered in this town, about six months ago, by the Rev. J. N. Simkinson. This lecture, doubtless, if not heard, has been perused with equal information and pleasure by all present.

The area now called "Northamptonshire" (for we must not conclude that the modern confines of the county date so far back as the Roman period) was intersected in Roman times by two main roads: one to the north, the "Ermine-street," and one to the north-west, the "Watling-street," and by several subsidiary roads; and the "Car Dyke" (which united the Nene and the Welland, and extended as far as the Witham, near Lincoln),—a work combining in one a drain and an embankment, a water-way and a road-way,—traversed its north-eastern extremity. In the same district was situate the important town of Durobrivæ (the present Castor), the pavements, the pottery, and other remains of which are so well known. Some specimens and fragments of pottery, bronze ornaments, and other objects, glass, beads, an imitation gem, and other relics from Castor and its neighbourhood, will be found in the present local collection.

About seventeen or eighteen years ago, in levelling the area of the present Wansford station yard (which, although actually in Huntingdonshire, is separated only by a road from the Nene, which divides that county from this), were discovered a series of sub-surface ovens (similar to those which had been found at Castor many years before), and numerous fragments of pottery.

This, though probably a mile and a half from the Roman area of Durobrivæ, was doubtless a suburb or outlier of that then increasing manufactory of earthenware. But more curious remains than these were found at the Wansford station. They consisted of some statuary in fragments (of which I have never seen any notice in print, excepting a paragraph in the *Stamford Mercury*, written by myself at the time), comprising the mutilated figure of a Roman general, bare-headed, and less than life-size; and two figures (about half the scale of the former) of Hercules and Victory, the latter holding a wreath. These, evidently, had constituted a group, representing a Roman general, supported, on the one hand, by Hercules, symbolical of strength (he also having been the patron of the Roman soldier), and on the other by Victory, indicating the successes which the general, whoever he might be, had achieved.

If I recollect rightly, the material used was Barnack stone, the quarries of which (four miles and a half due north of the station) are known to have been worked by the Romans.

This group may have commemorated some event of Mr. Simkinson's "frontier period," or perhaps was of a later date—perhaps never actually erected at all. The spot where it was found (associated as it was with the pottery ovens) may have been the site of the workshop in which it was wrought, and from which it had never been removed. I do not know, certainly, what became of this interesting relic; but I am inclined to think that the Duke of Bedford claimed it as lord of the manor, and that it went to Woburn.

Glancing at the Ordnance map of Northamptonshire, we shall find it studded with Roman stations, encampments, and fortifications; and Roman coins are sown broadcast over the whole district. Coins occur the most numerously in the small brass form; those of Carausius (the usurper but ultimately the acknowledged Emperor in Britain), and of his treacherous friend, general, murderer, and successor, Allectus, being particularly abundant around Barnack. Large and middle brass Roman coins and denarii are by no means scarce, and a few gold coins (generally in fine preservation) are also found. These Roman coins range in date from the time of Augustus, B.C., down to the departure of the Romans in the reign of Honorius, A.D. 420; but they are much too numerous and too varied (both as to reigns and to type) to allow of any description in this notice. Some years ago, a fine gold coin (an aureus of Augustus) was found at Upton, near Castor, having on the obverse the head of the Emperor, and on the reverse, a bull walking, with the simple word "AVGVSTVS."

Four or five miles westward of the present Wansford station, the Romans worked the ironstone of the inferior oolite, in the locality now represented by the lordship of King's Cliffe; and here, recently, was found a gold coin, in fine preservation, of Magnus Maximus, a Roman general of Spanish birth, who, holding command in Britain, usurped and maintained, from A.D. 383 to 388, imperial title and power in this country. If his high-sounding name was at all indicative of his personal dignity and power, this Roman must have been a great man indeed. The coin is the property of Mr. Fletcher, of Sheep-street, and is lent by him for this occasion.

Thus, completely as the area of Northamptonshire and adjacent counties was occupied by the Romans, it is not surprising that, from time to time, indications of their occupation should be discovered in places previously unassociated with the Roman name; and, in fact, such discoveries not unfrequently occur. About twenty-five years ago, a cinerarian urn was found near the Paper-mill, at Wansford (at a spot about three miles due west of Castor), contained in a covered inclosure or chamber, made up of five large stones, bearing evident marks of fire, the top being only a few inches beneath the surface, which for ages had been ploughed over. This chamber was of about the capacity of a bushel measure; the urn stood in the centre, and was surrounded to the depth of several inches by ashes and charred fragments of bone. The urn, to about a third of its depth, contained what appeared to be earthy matter, a few small fragments of bone, and the crown of a molar tooth, beautifully preserved. Upon my solicitation, some years afterwards, the urn and contents were presented by the owner of the property, the late Richard Newcomb, esq., to the Stamford Institution, from which I have borrowed them for to-day's meeting.

About the same time some (one or more) skeletons were turned up near Warmington (a few miles from the last locality), and with them an urn, or rather jar, apparently of a later date than the Wansford urn, but undoubtedly Roman. This jar and a skull came into my possession, and were given by me to the Stamford Institution. The skull is not forthcoming, but the jar and some teeth, which I retain, are here.

The most interesting and important discovery of a Roman house, at Apethorpe, in the same neighbourhood, some three or four years since, has been made familiar to all by the able and learned treatise by the Rev. Edward Trollope, published in the annual volume of our Associated Societies for 1859, and needs no further allusion from me.

[Mr. Sharp then gave a description of the Roman remains discovered at Dallington, an account of which appeared in the *Northampton Herald*, in a report of a meeting of the local committee, at the time.]

Mr. Sharp then proceeded—

The Saxon age succeeded to that of the Roman, and to the very short Romano-British period. The Saxon race (however modified by numerous after intermixtures with other races) was, undoubtedly, the foundation stock of the present English people. The point of civilization to which the Saxons attained has from time to time been illustrated at the meetings of this society, by the collection of rich personal ornaments exhibited by Sir Henry Dryden; while an enduring testimony of their

✠

* By Mr. Samuel Sharp, F.G.S. Read at the late meeting of the Architectural Society of the Archdeaconry of Northampton.

complete inhabitancy of this county is found in the remarkable churches of Brixworth, Earl's Barton, Whittering, and some others.

It has been suggested that the tower of Barnack church, from its peculiar ornamentation, is Anglo-Danish (or rather, perhaps, Saxo-Danish, if I may be permitted to coin a word), and that it was built in the time of Canute, who, it is said, in the desire to make reparation, rebuilt many churches which had been destroyed in the predatory excursions of his countrymen.

The name of "Danes'-hill" (though purely traditional) serves as a memorial of the presence here of those old "sea-kings." The intermixture of the Danish blood aided in that old time to strengthen and ennoble the character of the English races; and it is confidently hoped that the intermixture of the like Danish blood with the present royal blood of England (so soon to take place) will be attended with a no less happy result.

The successful invasion by the Normans in 1066 inaugurated a new era, and another commingling of races. Though derived from the same stock as the Danes, the Normans had beeome a distinct people. By their settlement in this country, what I will call the "aristocratical element" was introduced. They left the footprints of their power and grandeur in their noble churches, their castles, their hereditary nobility.

The building of the Castle by Simon St. Liz, of St. Sepulchre's, St. Peter's, and St. Giles's churches, in Northampton, with innumerable other churches, and additions to churches, in the district, and of Peterborough, the subsequent well-worthy diocesan cathedral, sufficiently identifies the Normans with Northamptonshire.

Peterborough Cathedral, with its successive styles, seems to link the Norman with succeeding ages. During its progress towards completion occurred the troubles and contentions of Stephen's time. Passing over these, and coming to the year 1164, we find a great assemblage at Northampton, on the occasion of the embittered meeting and contention of Henry II. with the haughty primate, Thomas a'Becket—an event which has left its mark in the traditional name of "Becket's Well.

During that progress also passed the crusading reign of Richard the Lion-hearted. Those extraordinary and enthusiastic expeditions to the Holy Land wrought up to the highest pitch the chivalry of Europe in Mediæval times; and they have left their memorials in this county in numerous sepulchral effigies of cross-legged armoured knights.

To this period may be assigned a bronze seal found near Duddington. This bears, in a kind of quatrefoil, a shield divided by a plain cross, separating four escallop shells, with, for crest, a leopard's face; it has the very unusual form of inscription (probably in Norman French), "Sigelis d'Harphe." I have been unable to find in any heraldic book either the name or the arms, but the escallop shells tell us that the owner also had been in Palestine.

Some years ago, in repairing the foundation of some part of Peterborough Cathedral, a small gold ring was found, ornamented with a rose of five ruby garnets surrounding a minute emerald, having also this peculiarity, that the stones have been cut after they were set. I have been told that this is a Mediæval ecclesiastical ring. I know nothing of its character, however, nor of the period to which it belongs.

Before the beautiful front of Peterborough Cathedral had received its crowning spires, Edward I. had come to the throne, and they were not yet completed when the solemn procession conveying to Westminster the corpse of the royal Eleanor traversed the county. It passed onwards and away; but the exquisite crosses of Geddington and Northampton uprose, like fairy emanations, upon the resting-places of the body of the much-loved queen.

Referring to Mr. Poole's Synchronological Table of English Bishops, I find that, from 1370 to 1407, Henry Spencer was Bishop of Norwich. He bore the arms, and was evidently a member of the great and noble Northamptonshire family of that name. During his time there were a Pope and an anti-Pope. The Neapolitan Urban VI. filled St. Peter's chair at Rome, from 1378 to 1389, while the French Clement held, at the same time, a second Papal court at Avignon. Henry Spencer raised an army of several thousand men in this country, and passed over to the Continent to support Urban; hence he was called the "warlike bishop."

A Papal "bull" or leaden seal of this Urban VI. was, a few years ago, thrown up in digging a grave at Ufford, in this county. On one side, are two very different heads facing, rudely executed; over them are the letters "SPASPE"—in abbreviation of "Sanctus Paulus, Sanctus Petrus." On the opposite side are the words "Urbanus P.P. [for Papa] VI.," divided by eagles' heads, and with two spread eagles beneath. Whether this bull has anything but a synchronous connexion with the warlike expedition of Bishop Spencer, there is nothing to show.

In less than a century after this period, we find the country desolated by the fratricidal Wars of the Roses,—Northampton wreathed as it were with a battle-field—and contending armies traversing and re-traversing the county. Among the indications of these events are numerous Late Perpendicular churches, which have been built to replace others (probably of a better type) destroyed by the ruthless hand of war. These wars (though differing in their origin) offer a miniature parallel to the equally fratricidal, but colossal and most lamentable, contention which is raging on the other side of the Atlantic; and which can only result in the severance of that federation which was founded by the descendant, and which adopted nationally the arms, of the Washingtons of Brington.

But the long-festering quarrel between the great rival houses was at last healed by the defeat and death of Richard III. upon the field of Bosworth, and by the marriage of the Lancastrian conqueror, as Henry VII., to the Yorkist Elizabeth, daughter of Edward IV.; and England for a time had peace.

During the subsequent years, at Colley-weston, the ancient seat of the ancestors of the Wellesleys and of the Dukes of Wellington, sometimes resided one of the most eminent and most excellent of English ladies. In the previous century, John of Gaunt, "time-honoured Lancaster," had obtained from that same Urban VI., a bull for the legitimation of his children by Catherine Swinford, and they took the name of "De Beaufort" from the castle in which they were born. By this line, and in the fourth degree, was descended from John of Gaunt the lady I have referred to, Margaret Beaufort, Countess of Richmond, mother of the King. She had for a third husband Thomas Stanley, first Earl of Derby; and from her (by her first and third marriages) has descended by three lines (which ultimately merged), and through thirteen generations on the male and fourteen on the female side, the present, the fourteenth, Earl of Derby. This Margaret Beaufort founded the Colleges of Christ and St. John, at Cambridge; and it is from her that the latter has derived its landed possessions in this county.

In Peterborough Cathedral was buried, in 1536, Catherine of Arragon, the repudiated wife of Henry VIII., not very many weeks before the beheading of Anne Boleyn, her hapless rival and successor.

The reign of Elizabeth is great in the annals of this county; but is disgraced by the damning and cruel act of the decapitation of her cousin, Mary Stuart, at Fotheringhay. When James came to the throne he exhumed in Peterborough Cathedral, and re-buried in pomp, at Westminster, the body of the mother he had failed to save from the axe.

The unfinished building at Lyveden—that unsolved enigma—and the beautiful, though equally incomplete, market-house at Rothwell (both the work of the father of the conspirator Tresham), call ever to remembrance the famous "Gunpowder Plot:" these, the numerous family associations of the other conspirators, and their several places of rendezvous in the county, connect (but not with credit) Northamptonshire with the reign of James I., styled by the Duke of Sully, "the wisest fool in Europe."

Of the reign of Charles I., the battle of Naseby Field is the point of interest to this county. This battle was fought on the 14th June, 1645, and was the last great encounter between the "Cavaliers and the Roundheads;" and here, virtually, Charles lost his crown.

Mr. James has several interesting relics found on Naseby Field, and I have a sword—found on the field of the still greater battle of Marston Moor of the previous year—the blade of which exceeds 3 feet in length, and this will give some idea of the kind of sword used at Naseby.

After some vicissitudes, Charles obtained shelter in the royalist city of Oxford; but being tempted thence by promises of protection from the Scotch, he proceeded, in disguise, to join their army before Newark, passing through Stamford—(where he slept at the house of Ald. Wolph) on the night of May 3, 1646—"for the last time as a free man." He was accompanied in this flight by Mr. Michael Hudson, rector of Uffington, near Stamford, who was afterwards barbarously murdered by a party of Parliamentarians at Woodcroft House, near Peterborough. This curious old moated house still remains.

Charles was speedily betrayed by the Scotch, upon payment to them by the Parliament of an alleged debt of 200,000*l.*; and on the 16th of February, 1647, he was conveyed to Holmby House. A prisoner, in the heart of Northamptonshire, I leave the misguided but ill-fated monarch, and here close my epitome.

Rapid and incomplete as my sketch has necessarily been, I think I have borne out my opening statement, and shown that there are in Northamptonshire numerous localities, and an abundance of objects of antiquarian and historical interest; and I think that all must regret, with me, that as yet there is no museum in which the treasures from so rich a field can be collected and preserved.

In the formation of a county museum, I think the chief attention should be directed to the collection of objects connected with the county, which should form a separate and the most important department.

Besides the antiquarian field, Northamptonshire contains an unusual range of geologic strata, exceedingly rich in fossil remains, of which a most valuable and interesting collection might readily be made. Illustrations of the present natural history of the county should also be added.

It is useless, however, to accumulate a quantity of valuable material unless all necessary provision be made for its preservation, classification, and arrangement; so as to allow of the display of certain objects, and of access to all, for the purpose of examination, without disturbance or damage; and an efficient curator should be constantly employed to maintain the museum in order and in progression.

Innumerable objects of local interest and value (the existence of which is oftentimes unknown to any who can detect their significance and importance) are spread about the county, in the possession of persons who are not collectors, and who, perhaps, would generally be glad to deposit them in a receptacle where they would be preserved, and, at the same time, open to public observation.

If a sound and practical scheme, embracing such arrangements, were propounded, I believe we should speedily have a museum in Northampton which would be of great interest and utility to the public, and a source of honour and pride to the county.

MARK-MASONRY.

NEW RAILWAY VIADUCT, NEAR DUNKELD.

THE newspapers have mentioned that the Duke of Athole, assisted by the Freemasons, recently laid the first stone of a new bridge across the Tay, in connexion with the Inverness and Perth Junction Railway, and have reported the good advice the Duke gave to navvies,—not to spend their money so fast as they do. On that occasion a stone cup or bowl was presented to the Duke, on the part of the navvies. The cup bears carved masonic emblems on the exterior, and in the bottom the arms of his Grace are neatly carved. The cup is of Ayrshire stone, about 7 inches in depth, and about 12 or 13 inches in diameter; it was cut out by G. Gunn, one of the overseers on the line. The cup was furnished with a masonic base of black marble, executed by Mr. Brodie, sculptor, and presented by the architects. It bears the following inscription:—"Presented to his Grace the Duke of Athole, K.T., by the navvies employed on the Dunkeld contract of the Inverness and Perth Junction Railway."

Mr. Gowans, one of the contractors, in presenting it at the request of the men said, that Gunn, who had cut out the cup, was a good mark-mason—a thing which he was sorry to see was rather lost sight of in their craft. Referring to mark-masonry, Mr. Gowans said that he had given the subject a good deal of study; and he found that the masonic marks which were on the base now presented, produced the whole of those lines of architecture which had been admired from the time of the Egyptians, through the Roman and Grecian periods and Middle Ages. Mark-masonry was an excellent study, because it brought out the fact that truth, whether in form or anything else, was immutable. Beauty was a true thing, and anything that was founded on a true figure must produce beauty. That was a secret which had been handed down to the masons, and he had shown it on this base to tell that they had not altogether lost sight of that portion of their craft. He concluded by remarking that on this occasion he could not well say what he felt, and he knew he

could not well say what the men felt. It was a blessed thing that they had bright spots in their lives. When they came into this part of the country they found the Duke of Athole to help them forward with the undertaking, and he begged to thank the Duke in the name of the men.

A CHILD VIEWED AS AN INVESTMENT.

Following up this view, which has been presented before now by the *Builder*, Mr. Edwin Chadwick, in his address at Oxford, said:—

Treating each child as an investment of capital to be applied productively in honest industry, it is a total loss if he fail from moral defaults. If he turn mendicant, pauper, or thief, he will still levy a maintenance on the public; as a thief most wastefully by spoil, as a criminal in prison or in convict establishments, he will be kept at, generally unproductively, double the expense of maintaining a pauper. The insurance table would give him, from the tenth year, the chances of forty years of life and waste, and this waste would be under-estimated at the keep of a pauper, or a total loss of 480*l.* on every case of failure. As a matter of fact coming within my own personal investigations under the Poor-Law Commission of Inquiry, not above one-third of the children reared in the old parish workhouses with adult paupers, after leaving the workhouses, could be traced into respectable service in self-supporting conditions; and where the old conditions are permitted to continue, there is a total loss of two out of every three investments. The case of the Royal Military Asylum, Chelsea, for the children of soldiers, which is a school of mixed physical and mental training, may be presented as another example of educational power and economy in result. In the investigation of the sources of juvenile delinquency or of mendicancy, and the parentage of the delinquents, one common answer was, "Father a soldier," or a sailor, "mother dead," or "mother unable to maintain him," "deserted;" and there cannot be a doubt that, in the absence of any care or provision for that class of children, the great mass of them must be economically total losses of capital. The following are the results of the returns of their characters from the commanding officers of the regiments which they have joined:—Out of 376 children, 87 were returned as exemplary, 261 as good, 23 as indifferent, and only 5 as bad. But equally important is the evidence of the increased value given to the investments by good training, including the physical as well as the mental training, as displayed in the ranks attained by a large proportion of the children, and those ranks denoting the increased value which may be imparted to the investments by improved training. Twelve were staff-sergeants, 25 sergeants, 32 corporals, 95 trumpeters or drummers, and 210 as privates. Out of this school seventeen had become commissioned officers. I attach much importance to schools of this description, as imparting, with the physical training, those moral virtues, or, speaking more correctly, economically, those values implied in the term discipline—attention, prompt and exact obedience, patience, self-restraint—so important for productive applications. I am glad to find that his Royal Highness the Duke of Cambridge and the Council of Military Education are in advance in educational improvement, as they have ordered a reduction of the hours of sedentary application to an average of about three hours daily; and, as the head-master assured us on a recent visit with foreign commissioners, without any reduction of the amount of mental progress. Another school — the Naval School at Greenwich—I would cite as an example of the economical value of good teaching power, as proved by rare statistical evidence—for it is rare to get direct statistical evidence of the results of any particular course of education, or of education in general, for there is no systematic outlook on their course after they leave school. In respect to the district school, the results are obtained by the inquiries of chaplains at their places of service. In the instances to which I have last referred, the results are obtained by regular returns from the commanding officers. Some years ago, when the education given at the Naval School at Greenwich was on an ignorant notion of a low education and training being all that was requisite for a sailor, then there was great moral disorder, great waste, as shown by desertions. The statistics with which I have been favoured by the Rev. Mr. Fischer, the principal of the school, made up from the officers' returns for a series of years, and the school returns of intellectual progress, prove that the rise of intellectual improvement is accompanied by a closely corresponding rise in moral, and also in economical result, in fewer and no desertions, in the advancement of the value of the service obtained—as shown by the increased proportion of petty officers, and the appearance from amongst them of superior officers. The general economical deduction from this evidence is, that were the same methods of physical and mental training made general, as they might be, we should, in this special service as in the civil service, get equal or greater power with from one-fourth to one-third fewer men to enlist, feed, clothe, carry, and pension on retirement, which would be much longer deferred, and consequently that we could afford to pay them better, and better compete for voluntary enlistment with the civil service market. The progress of mechanical improvement in gunnery, with which it is the province of the mechanical section to deal, as members of that section specially conversant with the topic agree, is to give greater power to fewer men, with higher aptitudes, such as sound physical and mental training alone will ensure. The tendency of those improvements is to give the battle to economic science, husbanding and wielding capital, with the aid of mechanical means, applied by skilled artisans as engineers, under scientific commands. Educational statistics, such as those to which I have referred, demonstrate the practicability of completely abolishing the whole of that waste incurred by juvenile mendicancy and delinquency, and the great mass of habitual delinquency. So certain is the training and educational power as applied under the half-school time system, that contracts might be made for the attainment of economical as well as moral results in these respects. Under existing circumstances it is well to subscribe to reformatories as to hospitals for the treatment of the sick, but giving exclusive attention to them is like giving exclusive attention to the foundation and maintenance of hospitals for the alleviation of marsh and foul air diseases, without regard to the drainage of the marshes, or to the removal of the sources of the foul air whence the diseases arise.

THE CHURCH OF ST. NICHOLAS DU CHARDONNERET, PARIS.

The *tracé* of the Boulevard St. Germain has opened to view the church of St. Nicholas-du-Chardonneret, on the Boulevard St. Germain. The building has recently been thoroughly repaired and newly fitted up, and is just now run after as a novelty. This church, in its internal architecture, is a small model of St. Peter's at Rome, which the architect Lebrun was desirous of copying, less the dome, which is here only represented by a small cupola.

A porch is about to be erected for this church, for it has never been completed, and no principal doorway exists.

Contemporary with St. Roch and St. Sulpice, the church of St. Nicholas-du-Chardonneret bears a great analogy to them: it is gaily lighted, as was the fashion in the seventeenth and eighteenth centuries, when they celebrated the *messes musquées*. Commenced in 1656, and consecrated eleven years afterwards, it was then far from being terminated, nor is it at the present day. The works, interrupted for years, were resumed in 1705, and in 1709 the church was left in its present state. The style of St. Nicholas is the semi-circular, with groups of pilasters in the piers. In the lateral chapels there are some works of art, and the tombs of several illustrious personages. The chapel of St. Pierre is adorned by a sculpture in wood, representing the Prince of the Apostles at the moment of the Crowing of the Cock. This tableau was carved in the seventeenth century. In another chapel the recess opposite the altar is occupied with the tomb of Jerome Bynon, Avocat Général to the Parliament of Paris in 1621, who died the same year that the church was founded. This mausoleum is surmounted by a bust of the personage, by Girardon, who, according to a contemporary, never saw him; so that the likeness is only imaginary.

The chapel most noticeable is that of Saint Charles, which the painter Lebrun decorated for his mother's tomb, and which also contains his remains. The ornamentation is profuse in marble sculptures and fleurons in the rich and heavy style of the period. In the panel opposite the altar, Tuby and Colignon, sculptors of the seventeenth century, have represented a scene of the Last Judgment,—an angel, in high relief, boldly sculptured, floats through the air above the clouds, and blows a trumpet, while below, in a half-opened tomb, appears the mother of Lebrun, in her grave garments. The mausoleum of the painter is composed of a simple pyramid on a pedestal, the base of which is ornamented by a bust, by Coysevox. In 1818, to this church were transported the remains of Santeuil, who died at Dijon, 1697. The Duke de Bourg is said to have killed him, in a practical joke, by putting a strong pinch of Spanish snuff into his wine-glass.

THAMES EMBANKMENT.

METROPOLITAN BOARD OF WORKS.

At the usual meeting of the Board, last week, Mr. Bazalgette brought up his report on the scheme of the Thames Embankment, referred to in the Act of last session, in accordance with the minutes of the Board of October 17, 1862.

The report stated that the Thames Embankment Act, and plans referred to therein, defined in general terms the main features of the work, but left the Board to determine the details. The powers of the Board for the compulsory purchase of property would cease after the expiration of five years from the passing of the Act; but the execution of the work was not limited to that period. The Act provided that the Board should not deviate more than 5 feet from the levels defined in the sections of the Act, and should not deviate beyond the limits of deviation delineated in the said plans, without the consent of the persons through whose land such deviation should be made, nor carry the line of the Embankment-wall further into the stream than 3 feet, without the consent in writing of the conservators, and under no circumstances to carry the deviation more than 100 feet from the lines laid down in their plans, even with the consent of the conservators.

The face of the Embankment was to commence at the northern abutment of Westminster Bridge, in a line with the existing embankment of the Houses of Parliament, and would extend in a slightly-curved line to the northern brick pier of Hungerford Bridge. From thence it would continue to the first pier of Waterloo Bridge. The solid Embankment would terminate on the eastern side of the Temple Gardens. A roadway, 100 feet wide, would be formed upon that portion of the Embankment nearest the river, from the junction of the roadway of Westminster Bridge, passing under Hungerford and Waterloo bridges to the east end of Temple Gardens. From thence the roadway would be continued, at a width of 70 feet, on columns, to the level of Chatham-place, Blackfriars Bridge, on an incline of 1 in 60. The report then entered into details, showing that, if the Embankment were to be carried out to the second arch of Waterloo Bridge, it would show a more uniform section of embankment, would give a better current to the stream, and tend to prevent deposits on the south bank of the river, and would, besides, reclaim about 8 acres additional of land. But, the limits of deviation not extending so far, it would be unwise to go beyond the first arch. The approaches, or connecting roads between the Embankment and the existing streets, to be carried in the form of a crescent to the foot of Norfolk, Surrey, and Arundel streets, in the Strand. The new street to be formed from Wellington-street, opposite the end of Somerset House, falling at an inclination of 1 in 40 under Hungerford Bridge, near Northumberland Wharf, and connected with Whitehall-place by a prolongation thereof. Branch connecting streets from the new street were to be made in continuation of Cecil-street, Salisbury-street, Buckingham-street, and Villiers-street. A street connecting Whitehall, opposite the Horse Guards, with the Embankment roadway, was to be formed through Whitehall-yard and Whitehall Stairs, nearly on a level.

The report suggested the consideration of a plan for a road between Charing-cross and the roadway of the Embankment, for the purpose of relieving the traffic from the Strand and Fleet-street; and pointed out two routes through which it might be made; but provision had not been made for such a line of communication.

After dealing with several matters of detail, the report stated that the borings for the foundations were nearly completed; and the result up to the present time indicated that it would be necessary to carry them down to the blue clay, which, on the average, would be about 25 feet below the present bed of the river. The most economical way of effecting this would be by sinking iron caissons filled with concrete for the foundations, and by raising upon them, from below the level of low-water mark, a solid granite face embankment, without the aid of a coffer-dam.

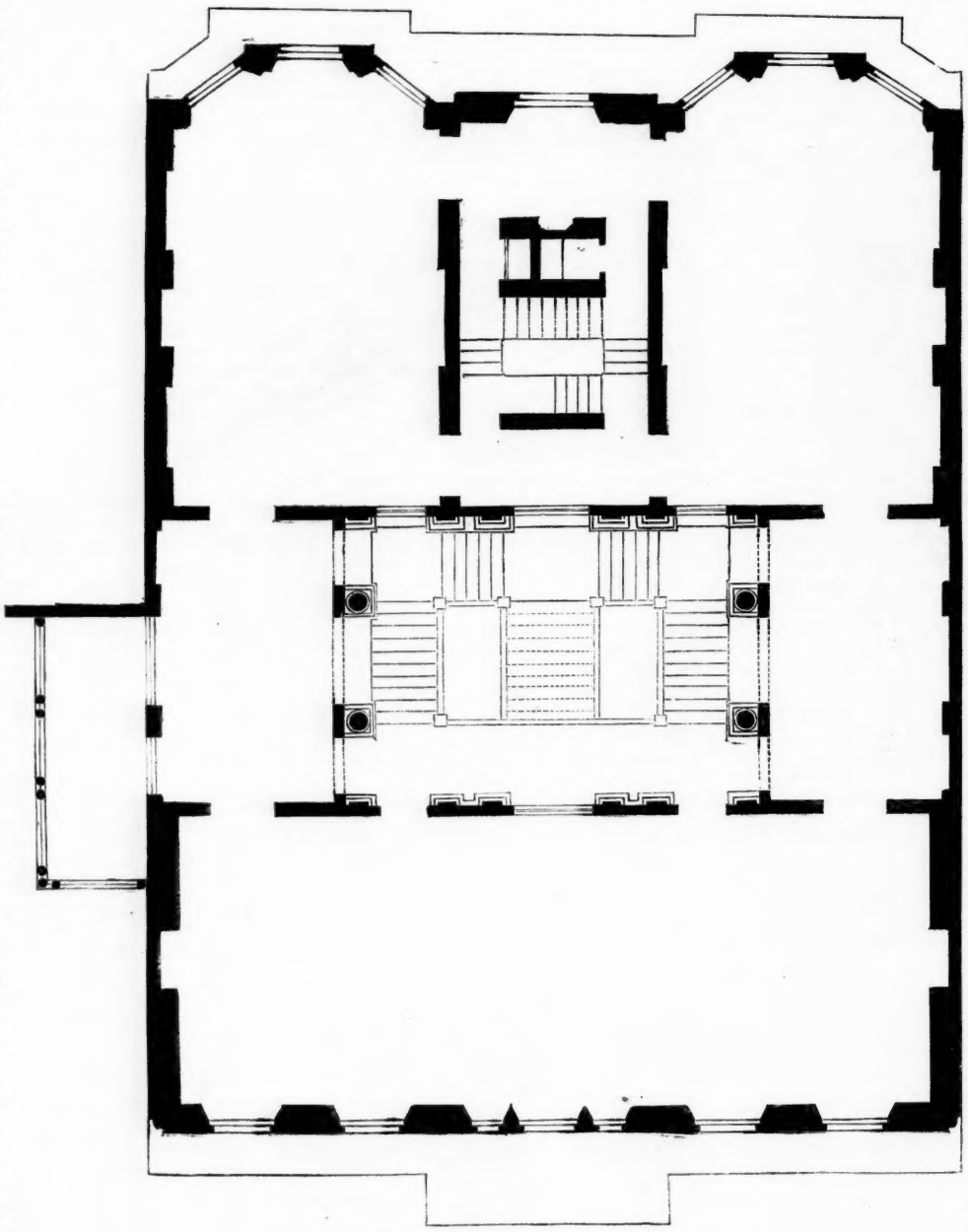
This report was referred to the Thames Embankment Committee for consideration and report.

BARON ROTHSCHILD'S NEW MANSION IN PICCADILLY.

The mansion which has been erected for Baron Rothschild, M.P., in Piccadilly, next Apsley House, occupies a site with about 67 feet frontage and 90 feet in depth, exclusive of the forecourt and garden in rear. We give a plan of the first floor and a view of the front.*

The house is built upon a bed of concrete, extending over the whole surface of the basement story. The walls throughout are built with stock bricks, in Portland cement from the Wouldham Cement Works, on the Medway. The front wall is entirely built of Portland stone: the side and back fronts are cased with Portland stone. The Portland stone is from Messrs. Steward's quarries in the Island of Portland. The floors throughout are constructed with cast-iron girders and tile arches. The iron-work is from Messrs. Grissell's works, Eagle Wharf-road. The roof is wholly covered with lead; and the chimney-stacks throughout are of Portland stone.

The basement story in the main body of the house includes servants' hall, men-servants' pantries, steward's room, housekeeper's room, still-room, sleeping-rooms for the principal men-servants, wine-cellars, strong-rooms, and hot-water apparatus. Under the terrace in the garden are the kitchen, scullery, pastry-cook's room, &c. Under the forecourt next Piccadilly are cleaning-room, bed-rooms for footmen, store-rooms, &c.



PLAN OF FIRST FLOOR.

On the ground-floor the entrance-hall is the centre of the frontage, 19 feet by 19 feet, leading to the principal staircase and saloon, with which all the principal rooms communicate. There are four sitting-rooms on this floor. The dining-room and library, each 36 feet by 22 feet 6 inches, are on the garden front, with bay windows, and an ante-room between opening upon the garden terrace. Fronting Piccadilly (on each side of the hall) are two rooms, 24 feet by 20 feet.

The principal staircase is of marble. The centre flight, 8 feet wide, is opposite the entrance-hall door: from the landing of the centre flight two side flights spring right and left to other landings; and thence two return flights reach the main landing level with the first floor. The side and return flights are 6 feet wide, and the principal landing is of the same width. The landings as well as the stairs are of marble; the main or principal landing connects the two ante-rooms on the first floor; and the ante-rooms are divided from the staircase by marble screens of columns and arches. These ante-rooms communicate with the first floor reception-rooms, viz., the two principal drawing-rooms over the dining-room and library on the ground-floor, connected together below with an ante-room, opening upon a wide balcony over the garden entrance. One room occupies the whole of the Piccadilly front, 62 feet by 24 feet, and communicates with the ante-rooms and the principal landing of the staircase. At the rear of the great staircase is a second staircase leading to the bed-room stories, and also communicating with the ground and basement stories.

The second or principal bed-room story includes five principal bed-rooms and three dressing-rooms. These rooms open upon a corridor with marble columns surrounding the principal staircase.

The third or bed-room floor contains two principal bed-rooms and dressing-rooms, with several smaller rooms for the women servants. Attached to the second staircase are a lift from the basement to the upper floor, water-closets, and a shaft containing the gas, water, and waste pipes.

The principal and second staircases are lighted by outer and inner skylights; and between the roof and the ceiling of the upper bed-room floors is a garret floor, containing the cisterns, tanks, bells, &c. The basement story is 12 feet high; the ground floor, 15 feet; the first floor, 19 feet 6 inches; the second floor, 13 feet 6 inches; and the third floor, 11 feet.

Messrs. Nelson & Innes, of Whitehall, are the architects; Messrs. Myers & Sons are the builders; Mr. Bawden, is clerk of the works.

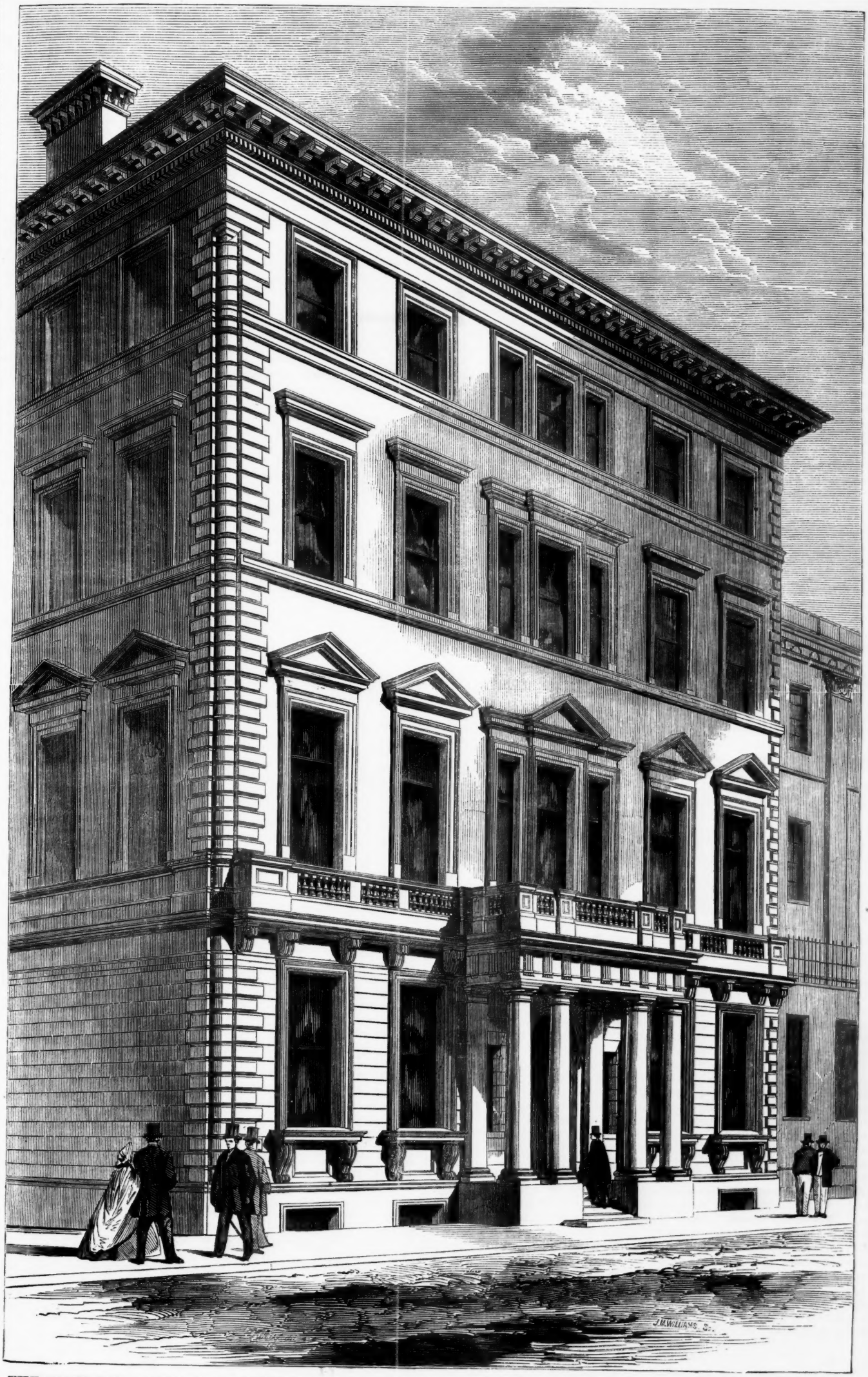
* The house stands some distance back from the public way. The figures introduced by the artist might convey a different impression. The flank of the ground-floor, though shown in our view, is hidden by the office-buildings of Apsley House.

THE CONDITION OF THE BANKRUPTCY COURTS.

We have on many occasions directed attention to the wretched accommodation and bad arrangements for heating and ventilation of several of the metropolitan police courts. Some improvement has since then taken place, but in such a case as Marlborough-street Police Court, in order to ensure comfort it would be necessary to reconstruct it altogether. Bad as this public office is, the Courts of Bankruptcy in Basinghall-street are at present, however, much worse suited for the transaction of the large and important business there carried on. These courts were very inconvenient before, but since the alteration of the bankruptcy laws has caused the removal of all the matters connected with the Insolvent Courts from Portugal-street to Basinghall-street, things have become far worse, in fact, it is difficult to conceive the scenes of confusion which take place there except by witnessing them. The house in which the Commissioners sit, and in which are several offices besides the court-room, is a large old-fashioned house, never intended for the purpose to which it has been put; and now the rooms are shocking in their sanitary arrangements, and often crowded to suffocation. Persons who are forced to go there, and who are obliged in certain instances to wait for hours, have complained loudly of the poisonous atmosphere; so have the lawyers and officers connected with the courts. The other day, one of the Commissioners was obliged to beg for a little air, and hinted that the room would be the death of him. The opening of a small window afforded some relief; but the winter and the cold weather are coming, when the people will not be willing to throw open windows, and then the air of those courts will not be bearable. There can be no doubt that the state of these public offices is very dangerous. It must, even, if the arrangements go on satisfactorily, be some years before the central halls of justice can be reared, and it is necessary to do something effectual here at once.

POPULATION AND HOUSES.

The revised census returns show that on the 8th of April, 1861, the number of houses inhabited by the population of England and Wales was 3,739,505. There was, therefore, one house to every 5·36 persons, or 536 persons to 100 houses. In 1851 there were 547 persons to 100 houses, so that, notwithstanding increased numbers, there is rather more house-room than there was. In the metropolis, however, taken as a whole, these returns show that the crowding is rather greater than less than it was; in 1851 there were 772 persons to 100 houses; in 1861, 780 persons. At the date of the census of 1861 there were 27,305 houses building in England and Wales; and in the same year the number of children born was 260,232 greater than the number of persons who died. The number of houses in England and Wales returned as "uninhabited" in 1861 is 184,694, an increase of 31,200 over 1851; but it must not be supposed that this means empty houses: it merely implies that in that number of houses no person sleeps. In the city of London, for instance, the "uninhabited houses" have, since 1851, increased from 1,059 to 1,576; but at least 1,200 or 1,300 of these are occupied during the day, though left tenantless at night.



THE MANSION OF BARON ROTHSCHILD, M.P., PICCADILLY, LONDON.——MESSRS. NELSON & INNES, ARCHITECTS.

PREVENTION OF DECAY IN TIMBER.

Messrs. York & Co. are circulating a translation of an "Essay on the Prevention of Decay in Timber," by a new system of carbonization, written by Mons. de Lapparent, Inspector General of Timber for the French Navy,* and which system, it appears, is extensively adopted at the present moment in the French Government dockyards for their line-of-battle ships, as well as by railway companies both in that country and Spain, for the preservation of their sleepers, &c. The advantage of putting the butt of a gate-post, for example, into a fire before placing it in the earth, is perfectly well known in England. The difficulty found in effecting this charring has prevented a more extensive use of the process.

Mons. de Lapparent says:—

"The methods of carbonization which I first employed at Cherbourg, and which, by the order of his Excellency the Minister of Marine, are about to be extended to all the dockyards of the empire, are free from these objections; and realize, on the contrary, all the conditions to be desired, whether of simplicity, facility, safety, or economy. They consist of strong inflammable gas.

Suppose a gaspipe, for instance, be brought into the dockyard. An india-rubber tube is screwed on, the other end of which, furnished with a joint, should be fixed at the side of the bench at which the men work. To this joint another end of a tube of sufficient length is fixed, and on that a little brass end is placed, similar to that of a fire-pump, but having inside a small pipe communicating with the reservoir of a foot-bellows on the bench. The object of this bellows is, first, to mix with the gas the air necessary to obtain a complete combustion; and, in the second place, to impinge on the jet of flame such a force that it may be directed in every way, and made to act not only on the surface of the wood, but in the holes, joints, bolts, mortises, &c., and in general on every part of the timber. The combustion takes place with the most perfect regularity; and, as can be proved, without the least danger; which, be it understood, does not exclude the precautions commonly prudent to adopt whenever fire is employed either on shipboard or in the dockyard."

The operation can be facilitated by smearing the face of the timber, in the first instance, with a little tar. He would apply the process to all joists and other timbers in house-building embedded in wall or shut in from the air by plaster or otherwise. Where gas is too expensive, or cannot be procured, he uses a small apparatus which has been found successful:—

"It consists of a small clay cupola, at the bottom of which is a grate filled with small pieces of coke. It stands on an ash-pan in which are two openings: into one the air-pipe of a small foot-bellows is inserted, and by the other the ash-pan can be removed and the cinders taken away. The cupola is surmounted by a dome, also of clay, forming a reflector; and in its surface are apertures for the entrance of the wood to be carbonized.

For railway sleepers, the size of the cupola ought to be that of the sleeper (say about 30 centimètres, or 12 inches diameter): this is placed on rollers, and is gradually and slowly introduced.

For hop-poles and vine-props the diameter of the cupola will be reduced at most to 15 centimètres, or 6 inches. This apparatus, as simple as possible, may be placed on a light cart or wheelbarrow, and carried wherever it is wanted. Though we see that the gas of oxide of carbon burns in the open air in proportion as it is formed, yet it must be admitted that there will be a great loss of caloric, and in that respect the cost would be greater than when ready-made gas is employed."

To prevent the growth of fungi, the author proposes the use of a paint having flour of sulphur as a basis, and linseed oil as an amalgamator. He considers it proved that by smearing here and there either the surfaces of the length of the ribs or below the ceiling with this paint, a slightly sulphurous atmosphere will be developed in the hold, which will purify the air by destroying, at least in part, the sporules of the fungi. The arrangements for the working of this patent in Great Britain have been undertaken by Messrs. York & Co.

* McKewan & Co., 46, London-wall.

KING WILLIAM'S COLLEGE, ISLE OF MAN.

Visitors to the Isle of Man during the last season will have noticed considerable additions to this well-known college; and, as the building usually excites interest in tourists, a short description of the improvements may not be uninteresting. The main block of building was commenced in 1830, the foundation stone being laid by that popular governor of the island, Cornelius Smelt. In 1833 the college was opened, and in 1844 almost totally destroyed by fire. Great energy, however, was displayed, and in about twelve months the college again was habitable, the original design having been carefully preserved. The entire pile is sufficiently imposing. A main front of 210 feet is broken into three gables, flanked with octagon turrets, both being finished with battlements. The work is rather rude in character, economy requiring wood mullions to the windows, and a total want of good freestone obliging rough imitations for battlements, label mouldings, strings, &c. A commodious chapel extends at right angles from the centre of the college, a tower, 120 feet high, rising from near the intersection, giving character to the general mass. In style we may say King William's College is Late Henry VII., partaking strongly of the Hampton Court quadrangle. About 100 pupils are educated here.

It will scarcely be credited that an establishment so important should for many years have been worked with a kitchen not 14 feet square, the outer offices generally being on an equally Lilliputian scale. The inconvenience at length however, became so great, that the trustees determined to remedy the defects; and the new buildings are now completed, presenting an additional frontage of about 60 feet, and inclosing nearly three sides of a quadrangle. They consist of a dining-hall, 45 feet by 24 feet, and 14 feet high; a kitchen, 30 feet by 20 feet, with its pantries, closets, and good scullery; arched larder, with double walls, stores for vegetables, &c.; large bakehouse and oven, proportionate to the wants of such an establishment; and shoe-house, with convenience for drying wet shoes—articles much worn by the boys. Four large dormitories for servants, with private staircase, form portions of the upper story of the new building, and three large hospitals another part. The hospitals have separate staircase from the vice-principal's house, W.C., housemaid's sink, supplies of hot and cold water, &c. Convenience in the matters of cooking-apparatus, hot and cold water supplies, rain-water, &c., are arranged for in the new buildings. The dinners to dining-hall are served direct from the kitchen, through a buttery hatch. The various departments are kept quite distinct, a vestibule being common to all, connecting the various classes of servants' rooms, dining-hall, kitchen, old portion of college, and private entrance for pupils. In addition to these various works, the boys are provided with a corridor, 80 feet long, in which to amuse themselves in unfavourable weather.

The new works necessarily partake of the general character of the old: greater regard has been paid to comfort and convenience than to pictorial effect.

The works have been executed from the designs of Mr. George Holme, of Liverpool, by Mr. F. Stowell, of Castletown.

FROM MELBOURNE AND VICTORIA.

It is generally believed that business has at last taken a turn for the better; and, as fine weather has again appeared after several months of almost incessant rain, it is hoped that a marked improvement will also be observable in building operations.

A start has been made with the town-hall, Hotham, of which Mr. Flanagan is architect. It is a plain, unpretending building: indeed, the architect could not accomplish much with the limited amount (1,200*l.* or 1,300*l.*) placed at his disposal.

When alluding to the Haymarket Theatre, in Bourke-street, I ought to have mentioned the stained-glass window which has been erected there by Messrs. Fergusson & Urie, showing that we have among us men by no means poor workmen. The subject of the centre window is the immortal Shakspeare; whilst on either side are figures emblematical of the purposes for which the hall is used.

Messrs. W. Powell & Co., ironmongers, have not long completed their new retail warehouse at the corner of Collins and Swanston streets, which, although not presenting any striking architectural features, is considered one of the best, if not the best, examples in brickwork which we have in the colonies, and is peculiarly adapted to the business for which it was designed. The architects were Messrs. Crouch & Wilson.

From designs by the same architects was erected, about twelve months since, a very commodious Wesleyan Church, in Fitzroy, one of the suburbs, capable of seating 1,350 people, at a cost of about 3,000*l.* The general effect of the building is sufficiently pleasing, and the acoustics are pronounced very good. From the cost it will be clear that no money has been squandered. The internal fittings, with the exception of the pulpit, are all of deal, stained and varnished. The pulpit is a good piece of workmanship, of best cedar, French polished. The style is something after the American Rostrum.

Additional buildings are being put up at the University, which have been the cause of considerable discussion in and out of the local papers. It is generally considered to be a covert attempt to secure the National Museum to the University; whilst it was only temporarily committed to the care of the professors until accommodation could be provided in the Public Library, a building more centrally situate, and a great resort, during their leisure hours, of those citizens who prefer reading to more unprofitable occupation.

Another failure in the attempt to introduce salmon has to be recorded. Why the parties on your side (says our correspondent) should charter a steamer coming out under canvas to transmit such precious and delicate freight, such vessels being notoriously slow, is a matter of considerable speculation.

Memorials to the intrepid Burke and his coadjutor Wills have been inaugurated at Castlemaine and Sandhurst; and another is shortly to be commenced in Ballarat. Nothing will be done in Melbourne until the bodies are brought down for public funeral. The leader of the party sent out for that purpose, *inter alia*, has been ordered to break up the depôt at Cooper's Creek, and bring the bodies down, since the last of the parties out has come in. A very interesting ceremony took place a few evenings ago, when his Excellency the Governor, in one of those neat speeches for which he is notorious, presented to King, the survivor of the first expedition, the gold watch of the Geographical Society, transmitted through the Duke of Newcastle. There was a very large attendance of members of the Royal Society and their lady-friends; and, to add to the interest of the occasion, Landesborough, the second to cross the continent from north to south, arrived in town during the day, and reported himself at the meeting.

The prospectus of the British and Australian Steam Navigation Company is now before the public, and the shares reserved for colonists are being rapidly taken up. The capital is 2,000,000*l.*, and they propose to run 7,000- or 8,000-ton steamers, which will receive the mail subsidy. The calculations of the promoters are said to have been approved by eminent engineers in England, and they show a large margin for profit.

Large sums of money are being transmitted from here, as well as the other colonies, for the relief of distressed operatives in Lancashire.

Experiments have been tried with a new projectile, invented in the colony. The first shot worked some improvement over the old round shot; but the two other shots were failures, inasmuch as, from some defect in the metal, they burst shortly after being discharged from the gun.

The shipwrights have been out on strike, through an attempt on the part of the masters to reduce the wages from 13s. to 10s. per day. The strike has been successful, so far that the old rate of wages has been resorted to.

STAINED GLASS.

Sibsey Church (*Lincolnshire*).—A large stained-glass window has been put up in this church to the memory of the late Thomas Foreman Gape, lay impropriator, who rebuilt the chancel in 1856, by subscription amongst his tenantry and other friends. The window consists of five lights and several tracery openings, the largest one a cinquefoil in the centre, in which our Lord is represented as seated upon a throne, with arms extended, as saying,—"Come unto me all ye that are weary;" and surrounded by a choir of angels playing harps; the background having stars on a deep blue ground. The foils, on which are the angels, are on a ruby ground. The openings of the tracery are filled with foliage of oak, ivy, &c., upon ruby and blue ground. The five principal lights are filled with fifteen medallions, the subjects illustrating the life of our Lord, commencing with "The Annunciation," "The Adoration of the Shepherds," "The Presentation in the Temple," "The Flight into Egypt," "Our Saviour sitting amongst the Doctors," "The Lamb of God," "The Baptism of our Lord," "Christ entering Jerusalem," "Christ clearing the Temple," "The Agony in the Garden," "Christ before Pilate," "The Scourging of Christ," "Christ bearing His Cross," "The Crucifixion," and, lastly, "The Ascension." The entire window is a mosaic: the pattern running over the window between the medallions is composed of the vine, naturally coloured upon a ruby ground. The cost amounted to about 200*l.* The artists were Messrs. Ward & Hughes, of London. This is the fifth window in the church of St. Margaret's, Sibsey, by the same artists.

Farnsfield Church (*Notts*). — Two memorial windows, presented by Mr. T. Parkinson, of Hexgreave Park, have just been inserted in the apse of the church. That portion of the structure

contains three similar windows in the Decorated style, each consisting of two lights and tracery. The one on the left hand contains two subjects from our Lord's life, preceding the Crucifixion, viz., the "Agony in the Garden," and "Bearing the Cross," under architectural canopies, surmounted with foliage. Beneath these (the two principal groups) are two smaller ones, in which are depicted the Old Testament types of the same, viz., the "Distress of Jacob on being shown the bloody Coat," and "Isaac carrying the Wood to burn the Sacrifice." The larger opening in the tracery contains the scape-goat as emblematic of our Lord's Passion; the others are filled with ornamental glass. This window is erected to the memory of the late Miss Milward, of Hexgreave Park. The window on the right of the apse contains, for the principal groups, "Our Lord's Ascension from the Mount of Olives," and "Our Lord seated in Glory;" the Old Testament types being the "Translation of Elijah," and "Solomon on his Throne." The larger opening in the tracery contains the "Agnus Dei." This window is erected to the memory of the late Mr. R. Milward, of Hexgreave Park. The remaining window, the gift of the Rev. H. and Mrs. Anders, was inserted at the end of last year; and, being the centre one in the apse, contains two subjects suitable to an east window, viz., "The Crucifixion and Resurrection of Our Lord;" the typical groups in the lower panels being "Abraham's Sacrifice of Isaac," and "Jonah cast forth of the Whale." The larger central piece of tracery contains "The Brazen Serpent reared on the Pole." This window is erected to the memory of the late Mr. John Parkinson and Mrs. Parkinson, of Ley Fields. In these three windows, which have been designed and executed by Mr. Wailes, of Newcastle, the same treatment is adhered to; so that, although varied in detail, the general effect is similar.

St. Peter's, Marlborough.—It is in contemplation to place two stained-glass memorial windows at the western end of the church. It has been suggested that one should be placed to the memory of Lord Herbert, which suggestion has met with the approval of the Marchioness of Ailesbury. The Prince Consort has also been thought of as a fitting subject to whom the other may be dedicated.

St. Matthew's, Bankfoot, near Bradford.—A stained window has been placed in this church to the memory of the late incumbent. The window is of the Flowing Decorated period, A.D. 1320, and consists of two lights, trefoiled, with quatrefoils in the head. The subjects of the main lights are "Our Lord's Conversation with Peter," when he asked him, "Simon, son of Jonas, lovest thou me?" &c., John xxi. 15, 16, 17; and "Peter healing the Cripple at the Beautiful Gate of the Temple," Acts iii. 6, 7. These subjects are in large medallions, above and below which are the Evangelistic symbols, the lights being filled in with conventional foliage. The artist was Mr. F. Barnett, of Leith, near Edinburgh.

CHURCH-BUILDING NEWS.

Notting-hill.—St. Mark's Church is in rapid progress, under the superintendence of Mr. E. Bassett Keeling, architect. It is a Gothic structure, in coloured bricks and Bath stone, with a Continental touch in it, and will have a slate spire 130 feet high. The arrangement consists of nave, side aisles, transepts, and chancel, with a vestry on one side and small chapel or aisle on the other side of chancel. The nave will be supported by iron columns, set back, from which is a gallery, through transept, side aisles, and west end of nave. The staircases, which will be spacious, come at the back of the west gallery, and over the staircases is an upper gallery reached from the tower, which forms an entrance porch on the ground floor. The nave principals will be supported by small marble columns on carved Bath-stone brackets and carved capitals. The whole of the interior will be finished in ornamental brickwork, the only plaster used being in the roof and soffits of galleries. The church will seat 1,380 persons, including children's gallery; and the contract has been taken by Messrs. Dove, Brothers, at 6,011*l.*, which includes font, pulpit, altar fittings, &c., of a plain character.

Rodmarton.—The church of this place has been restored and re-opened. Additional accommodation has been provided, and the whole building put in repair. A block of masonry which stood between the nave and north aisle has been removed. The square pews have been replaced by open sittings. The flooring has been renewed throughout, and a great many other improvements effected. The works have been executed, mainly by Messrs. Eassie & Co., of Gloucester.

Cutcombe (Taunton).—Early in 1861 it was determined by the vicar of Cutcombe to attempt the enlargement and restoration of the parish church. Mr. Giles, architect, was consulted. The old parish church of Cutcombe consisted of a nave and chancel, with a north aisle and north chapel. Mr. Giles recommended to balance the building by the addition of a south aisle; to which the vicar subsequently resolved, under Mr. Giles's direction, to add a south chapel, thereby rendering the whole complete. The contract was taken by Messrs. Pearse, of Minehead, and Hole, of Dunster, who have completed it. The red stone, as hard almost as granite, found in large blocks upon the surface amidst the heather of Dunkery Beacon, has been used in the columns of the arcade. The capitals, of white freestone, have been carved by Mr. Seymour, who has introduced the wild ferns of the surrounding hills. In the south chapel has been placed a stained glass window, in two compartments, by Messrs. Clayton & Bell. One compartment is a copy of the very old window in Christ Church Cathedral, Oxford, which represents at full length, in his sacerdotal vestments, Robert King, last Abbot of Osney and first Bishop of Oxford. This figure is matched in the other compartments by a similar one of the late Walter King, Bishop of Rochester.

Allesley (Coventry).—The ancient parish church of All Saints', Allesley, near Coventry, is about to be restored, and have the south aisle and chancel entirely rebuilt. Mr. Murray, of Coventry, is the architect; Mr. Mault, the contractor. The following were the tenders received for the restoration, &c., of this church:—Robinson, 2,300*l.*; Dutton, 1,950*l.*; Marriott, 1,680*l.*; Mault (accepted), 1,620*l.*

Lower Crumpsall.—The foundation-stone of the church intended to be dedicated to St. Thomas, at Lower Crumpsall, has been laid by the Bishop of Manchester. The church will be in the Decorated style, and will accommodate 450 persons. Its extreme length will be 102 feet; the nave being 76 feet long by 34 feet wide, and the chancel 26 feet by 18 feet. The nave will consist of six bays. The east window, of three lights, and the west window, of four lights, are intended to be of large size. The roof will be open timbered. The church will be built of stone, with a wooden belfry of perforated work, a vestry to the north of the chancel, and a decorated porch, in the second bay, on the south side. The site of the church and intended parsonage measures 4,500 square yards, and adjoins the Crumpsall schools. The erection of the church will cost about 2,800*l.*, of which 1,500*l.* is already raised. The builder is Mr. G. Shaw, of Saddleworth.

Bradford.—St. Thomas's Church, the fifth of the ten churches to be built in five years by the Bradford Church-building Society, has been consecrated by the Bishop of Ripon. The church, the style of which is Middle Decorated, is situate at the angle of Wigan and Ashton streets, on ground gratuitously devoted to the purpose by Mr. F. S. Powell. It consists in plan of a nave, north and south aisles, chancel, organ chapel, vestry, and south porch. The first stages only of the proposed tower and spire are now completed, and temporarily roofed in at the height of the chancel eaves. This, when complete, will rise to the height of 140 feet. The nave is divided from the aisles on each side by five Pointed stone arches, rising from octagon stone cylinders with foliated capitals. The chancel arch is supported by clustered columns with enriched capitals. The funds not permitting the erection of a regular clerestory, additional light for the nave is obtained by a series of gablets, filled in by tracery patterns and coloured glass. The woodwork throughout is stained and varnished. Externally, the walls are of delf stone, with ashlar quoins and dressings. The windows vary from five lights to one light in width, the heads being filled with geometric tracery. A bell-turret, rising 70 feet in height, surmounts the west gable. Accommodation is provided for 700. The site is inclosed by a stone fence and wrought-iron gates. The architects were Messrs. Lockwood & Mawson, of Bradford and Leeds; and the works have been carried out by Messrs. J. Burnley & Son, as masons; Messrs. Taylor & Son, as joiners; Mr. Bollans, as plumber; Messrs. J. Hill & Sons, as slaters; and Messrs. Briggs & Mensforth, as painters. The whole has been executed under the superintendence of Mr. Joseph Johnstone, of this town.

Skipton, Yorkshire.—The parish church of Linton in Craven, after having undergone a restoration under the personal superintendence of Mr. John Varley, of Burnsall, architect, has been re-opened for Divine service by the bishop of the diocese. Several fragments of an Early Norman church have been built into the vestry wall; and two altar slabs which were found under the floor of the church have been taken care of, as well as the sepulchral recesses in the walls of the nave, and an ancient piscina showing the position of one of the chantry chapels. The vestry screen is made of the blue stone from Oulton. The carving has been executed by Mr. Brooks, of Huddersfield, and Mr. Jacques, of Easingwold. The committee, for want of funds, have been obliged to abandon the building of a tower, as designed by the architect. The church has throughout been restored in the Early Decorated style, except the chancel roof, which has been made like the one existing in the seventeenth century, and which in Dr. Whitaker's "History of Craven" was described as being covered up by a plaster ceiling. The works have been executed by Messrs. O. & R. Wood, stonemasons, and Francis Verity, joiner, of Grassington.

Penistone.—The parish church of Penistone, Yorkshire, has been restored and re-opened. The work of restoration has been confined to the interior, and is scarcely yet completed. In addition to several minor alterations, the whole of the plaster has been stripped off the pillars and walls of the nave and side chapels. The west gallery has been pulled down, and the tower-arch opened out. The entire pewing has been swept away, and in its place open benches in the nave, and stalls in the chancel, have been substituted. The work has been done by Mr. Shaw, of Saddleworth.

Sunderland.—A new church, to seat 1,000 people, is about to be erected at Bishop Wearmouth, Sunderland, from the design of Mr. James Murray. The contract has been taken by Mr. James Young, of Sunderland.

South Shields.—St. Mary's Church, between South Shields and the Tyne Docks, has been consecrated. The building is in the Gothic style, and consists of a nave, 84 feet by 25 feet; terminating with a chancel, or altar recess, 18 feet 6 inches by 22 feet, having open timber roofs, the apex of which is 52 feet from the ground. There is a north aisle, 66 feet by 12 feet, and a south aisle, 79 feet by 12 feet; both having open timber roofs, the apex of which is 40 feet from the ground. There is also a vestry at the east end of the south aisle. The church contains sittings for 528 adults on the ground floor, and for 136 children in the gallery; making a total of 664 sittings. A new organ will be built by Herr Schulze, the German organ builder, who has recently completed the organ for Doncaster parish church. The pews are all open, with broad seats, sloping backs, and kneeling-boards. The cost of the building has been upwards of 4,000*l.* The church is designed to have a tower at the west end of the north aisle, of the height of 100 feet from the ground. This tower, has, however, only been carried to the height of 40 feet, and covered temporarily with an ornamental pitched slate roof. It is intended shortly to take steps to carry the tower to its full height. The architect for the building was Mr. J. Dobson, of Newcastle; and the contractor for the works was Mr. J. Elliott, builder, North Shields.

Newcastle-upon-Tyne.—The following account of the restorations which have been effected at St. John's Church, during the present year, is from the local *Courant*:—The south transept, children's gallery, and lower elevation seats have been entirely removed, with a view ultimately to re-seat this portion of the church. The whole of the roofs on the north and south transept, nave, and aisles of the church have been uncovered, by the removal of the plastered ceilings, exposing to view an oak roof, some parts of which are moulded and enriched. The principals and longitudinal rafters have been stained and varnished. The walls have been scraped, washed, and finished in a light tint colour. Amongst the external restorations, an outside stone staircase, leading up to the children's gallery, from which a doorway had been cut through the west side of the transept window, has been removed. The stonework of three windows on the east, and one on the west, sides of the south transepts has been entirely renewed; also, of another on the south of the same transept. The stonework of the eight clerestory windows has also been restored; and the north transept end window will be proceeded with immediately. The designs for the present restorations were furnished gratuitously by Mr. Johnston, architect. The contractor for the works has been Mr. E. Spoor, of Newcastle. The glass for the windows was from the establishment of Mr. Wailes. The church has been re-opened for divine service.

PROVINCIAL NEWS.

Pembroke, &c.—At a meeting of the Committee of Visitors of the Joint Lunatic Asylum for the Counties of Pembroke, Cardigan, and Carmarthen, the following resolutions were adopted:—1. Mr. Brandon's plan having been laid this day before the committee, and Mr. Brandon's explanation having been heard, the committee are satisfied that there is no unnecessary detail work in them, and that the estimate of 108*l.* per patient is not extravagant; and that the committee will apply to the Commissioners in Lunacy to be allowed at present to build only for 212 patients; but if their consent cannot be obtained, the committee think it more expedient to carry out the present plans than to make any further alteration, as that would cause a further delay, which the committee are of opinion would be most undesirable. 2. That Mr. Brandon be instructed to explain to the Commissioners that portion of the proposed Lunatic Asylum the erection of which might be postponed without prejudice to the completion of the plan as originally proposed.

Leeds.—The contractors for the enlargement of the Leeds Workhouse Infirmary are as follow:—Excavation and brickwork, Messrs. Swales & Brown, 670*l.*; masons' work, Mr. C. Jackman, 465*l.*; joiners', Mr. W. Britton, 509*l.*; plumbers', Mr. S. Powell, 239*l.*; ironwork, Messrs. Simpson & Tennant, 142*l.* 9s. 6d.; plasterers', Mr. R. Branton, 135*l.*; slating, Messrs. Watson & Wormald, 122*l.*; painting, Mr. H. Nelson, 11*l.* 9s.

Lambton Castle.—The work of restoring this residence is progressing under the care of the architect, Mr. Dobson, of Newcastle. A few years ago, several large cracks were made in the castle walls, owing to the old coal workings underneath having given away. Numbers of workmen were employed in building up these workings with brickwork. This was accomplished; and, after a certain time had elapsed for the purpose of discovering whether any further cracks appeared, the present work was commenced. Already a considerable portion of the south front is finished. Very considerable alterations, chiefly internal, have been made; but the main outline of the castle will be preserved.

Wigan.—It has been determined to erect a new town-hall and gaol at Wigan.

SCHOOLS OF ART.

The Birmingham School.—We are glad to be able to contradict the report that this school is in a sinking condition. On the contrary, it has never been in a more healthy state; and although there was a deficiency in the last year's accounts of 80*l.*, this arose from the current receipts, which, in fact, exceeded the current expenditure by 151*l.*, having had to meet law charges amounting to 231*l.*, and due to the renewal of certain trust deeds connected with the local Society of Arts, virtually the committee of the school. The head-master, Mr. Rainbach, states that the surplus of receipts is thus rapidly clearing off a moderate amount of liabilities incurred in former years.

The Coventry School.—The eighteenth annual meeting of this school has just been held; the mayor in the chair. The report calls attention to a very marked improvement evinced in the drawings exhibited on the present occasion. "The individual and collective merit of the productions," it continues, "is best exemplified by the gratifying fact that thirty drawings have obtained medals, and twenty-four besides have been honourably mentioned. This large number of medals would have been still further increased by the addition of six others had it been in the power of the Government inspector, Professor S. A. Hart, R.A., to have awarded them. This distinction of obtaining thirty medals at one exhibition has only been equalled in one previous instance, when the same number was gained at Manchester, in a school where four masters are engaged in the superintendence of eight hundred pupils. At the last annual meeting," continues the report, "reference was made to the preliminary steps taken, and the amount of subscriptions raised, towards the erection of new buildings for the school of art in Coventry; when a letter was read from Mr. Samuel Carter, jun., stating his intention of giving the munificent sum of 500*l.* towards the furtherance of that object. The committee have now to record the gratifying fact that the chief stone of the new school was laid on the 18th of August last, by Mr. Carter; and that the building, under the direction of Mr. Murray, and the weekly supervision of members of the committee, is progressing most satisfactorily towards completion."

The Nottingham School.—A new School of Art building is about to be erected in Nottingham, upon a plot of land adjoining the Arboretum, and which has been presented to the school committee by the corporation. The new school will contain drawing and painting rooms for male and female students, model room, library, private rooms for head master, residence for porter, &c. On the first floor there will be an exhibition room, 76 feet long by 30 feet wide, top lighted. The plans (which have received the approval of the Government Department of Science and Art) have been prepared by Mr. F. Bakewell, of Nottingham, architect.——The introductory lecture of a series on science has been delivered in Nottingham by Mr. J. C. Buckmaster, of the Science and Art Department. The lecture was explanatory of the aid afforded by the Committee of Council to students of art and science, and of the working of the system. The lecturer was introduced by the mayor, who presided.

The Southampton School.—The annual drawing examination of this school, by Mr. E. Crowe, the Art inspector, has just taken place. The inspector awarded nine medals and two honourable mentions. The room occupied by this school since its establishment in 1855 has become too small for its requirements; and the more advanced students pursue their studies under difficulties that would be much diminished, if not altogether done away with, by the contemplated removal of the School of Art to more commodious rooms in the Hartley Institute.

The Kidderminster School.—The examination of this school, which has only been established five months, has just taken place. It was also conducted by Mr. Eyre Crowe; and 140 students were examined, including those from the various public and private schools in connexion with the institution. There were twenty works by students, ten of which obtained medals. This result is very creditable to Mr. Kennedy, the master of the school.

THE CONDITION OF DALE CHURCH, NEAR OCKBROOK.

WHO'S TO BLAME?

UNTIL the dissolution of the monasteries in 1539, there existed in the lovely spot called Depe Dale, near the village of Ockbrook, and about five miles from the town of Derby, the noble Abbey of Dale, founded (tradition says) in 1204. It had its sixty-six abbots; and, as the poet writes,—

> "An altar first, then chantry, chapel, church;
> And last, in full magnificence it reared
> Its pillar'd cloisters, pinnacles, and towers.
> Time mark'd its rise; and time, whose rapid march
> Is oft involved in clouds and storms, has pass'd
> Again, in desolation, o'er the pile.
> Alone, *now*, of its greatness and its pride,
> *One* monumental arch alone remains."

This lone noble arch stands in the midst of a grass field. A few pieces of the stonework of the west end are discoverable against the cottages in the hamlet, and but one other relic is to be found. Its past grandeur, however, may be conceivable from the solitary remnant left.

Let us turn from what we need not draw too deeply from our imagination to picture,—this edifice, dedicated to God's service,—to the present condition of Dale and its church. He must be a keen observer who can now discern the so-called church. It consists of a crazy barn-like building, attached to a small house (now a farm-house), with a dove-cote in the roof. A pointed small door, unlocked, led us to the interior of the church. The floor is of old uneven brick: the walls are of rough stucco; the seats huddled and tumbling together, with apertures for rats which infest the place. The pulpit is a white-painted tub-like erection, in the south-east corner: a painted, *uncovered* box, 3 feet by 2, like a gude housewife's meal-tub, forms the altar. The interior is about 20 feet square, with a corner taken out of the north side. Over the west end is a gallery, approached from the outside by stone steps, formerly a store-room to the adjoining house; to which house, also, there is access from the church, but lately used by the singers to pass through for refreshment; the house having been, in the memory of many, a *public house*,— the whole savouring of irreverence, dirt, and neglect. The hamlet contains between 400 and 500 inhabitants. There *is no school*; consequently startling ignorance and infidelity prevail.

In a corner of the churchyard stands the former handsome octagonal stone font, the carving of which is still discernible. This, placed by the side of a soft-water tub, doubtless assists it in its duty; while it is replaced by a white washing basin in the church.

One service only in the week is all that these 400 or 500 beings are favoured with. It was remarked that Dale Church surpassed in neglect and devastation any church that could be found in Lincolnshire (proverbial for its bad ecclesiastical village edifices) or Cornwall. Can the eminent and elegant-minded author of the "Life of Pitt," to whom this hamlet of Dale belongs, be aware of the neglected state of this part of his estate?

THE HARTLEY INSTITUTE, SOUTHAMPTON.

ALTHOUGH we have already given descriptive details as well as a view of this building before it was erected, we may take occasion of its opening to quote from the local papers some particulars of its actual construction.

The principal entrance is in High-street, and is protected by a porch supported by four caryatides, symbolising "Manly Vigour," between which are three carved keystones, representing "Wisdom," supported by "Navigation" and "Commerce." Within the porch are three sets of double doors, falling back into the thickness of the wall, with inner swing glass doors. These doors lead into the hall, 26 feet 6 inches by 23 feet, and 13 feet 6 inches high, from which a straight corridor, 10 feet wide, leads direct into the ground-floor of the lecture theatre. Between this main corridor and the hall is, on the left-hand side, the principal staircase; and, on the right-hand side, a lobby, opening on two ground-floor class-rooms, one 22 feet by 14 feet 8 inches, and the other 23 feet by 20 feet 6 inches. A small staircase leads down to the basement floor, the whole of which is vaulted. The foundations go down to more than 20 feet below the level of the street, and rest upon 9 feet of concrete.

At the extreme end of the main corridor, on the ground-floor, is a cross corridor, 10 feet 9 inches wide, leading, by means of four wide entrances, on to the lecture theatre, and also having at either end staircases leading to the galleries of the lecture theatre. These staircases are of Portland stone, 4 feet 6 inches wide, and are built with a solid wall on either side of the flights, so as to prevent all danger in case of panic. This is also provided for by the sixteen windows of the ground-floor of the lecture-hall being carried down to the floor and made to open upwards.

The lecture theatre itself consists of a ground-floor, 64 feet by 56 feet, with a semicircular end, and two tiers of galleries 10 feet deep, supported by cast-iron columns 11 feet apart. It is designed to accommodate 2,000 persons. The lecturer speaks from a recess or platform on the first-floor, over the public corridor, 34 feet by 12 feet deep. At the back of the platform is a retiring room for the lecturer and committee, 18 feet by 10 feet; and, opening from it, a room, 30 feet 6 inches by 10 feet, always kept warm by hot water, for the storing of apparatus or the preparation of philosophical experiments. The roof over the lecture theatre is a mixed one, of timber and iron, having curved laminated ribs over the central portion, and flat ceilings over the galleries, and being in one span from wall to wall outside, and the whole tied together with iron rods. The ceilings in the lecture theatre are deeply panelled, and a semicircular arch is turned over the lecturer's platform. In the centre of the ceiling are three large perforated flowers for ventilation, communicating with ventilators in the roof.

The museum is placed on the ground-floor, at the side of the main corridor which gives access to it, and consists of a ground-floor with two galleries, the whole being 50 feet by 27 feet, and 35 feet high. The roof consists of ordinary trusses, panelled on either side, and glazed between at the line of the exterior with Hartley's rough plate-glass. The museum galleries are reached from the principal staircase. All the corridors and the hall on the ground-floor, as well as the lobby at the head of the principal staircase, are laid with encaustic tile pavement, from the works of Messrs. Maw & Co.

The whole of the frontage on the first-floor is devoted to a reading-room, 70 feet by 23 feet, and 19 feet high, with a balcony over the porch below. This room has Corinthian columns and pilasters at either end, and a deeply-paneled ceiling, with enriched cornices, the beams being formed round the wrought-iron girders necessary to carry the floor above. The library opens on to the reading-room, and consists of a room 30 feet by 14 feet 8 inches, and 12 feet high.

A small mezzanine floor over gives a class-room 18 feet 6 inches by 15 feet, and two small studies, one 10 feet by 8 feet 6 inches, and the other

11 feet 6 inches by 8 feet, and the whole 8 feet 6 inches high.

On the upper floor is placed the School of Art, 46 feet by 23 feet, and 14 feet 6 inches high; and by the side of it a class-room, 23 feet square, and of the same height. At the rear of the School of Art is a class-room, 28 feet by 15 feet, and 13 feet high, and a small study, 9 feet by 6 feet 6 inches. These rooms are ventilated through the roof.

The whole of the frontage consists of Portland stone, with brick-backing, of which latter material the whole of the rest of the walls are constructed. The building is warmed throughout by means of hot-water coils. The coils of pipes are enclosed in enameled slate coil-cases, by Mr. Magnus, who has also supplied the whole of the chimney-pieces.

The contracts were taken by Mr. Gambling, of Southampton; and the carving has been executed by Mr. Mabey, of Westminster. Messrs. Green & De Ville were the architects. The total cost of the works, exclusive of the architect's commission, salary of clerk of works, &c., will be 10,900*l.*, and this sum did not include the decorations. Mr. D. Geddes, of Southampton, was the clerk of works.

THE BUILDERS' BENEVOLENT INSTITUTION.

The fifteenth anniversary festival of the Builders' Benevolent Institution was held on Wednesday evening last, at the London Tavern.

Upwards of 200 gentlemen sat down to dinner. Among those present were Mr. Alfred Lawrence, Mr. George Plucknett, Mr. Edward I'Anson, Mr. Alfred Smith, Mr. W. R. Rogers, Mr. Thomas Robinson, Mr. W. M. Dunnage, Mr. J. R. Freeman, Mr. David Myers, Mr. George Lee, Mr. Tilson Lee, Mr. John Barnett, Mr. John Barnett, jun., Mr. George Dines, Mr. John Cumber, Mr. David Nicholson, Mr. Joseph Bird, Mr. F. Sneezum, Mr. Cotton, Messrs. Wood & Sons, Mr. A. Armani, Mr. Thomas Cozens, Mr. Hutchons, Mr. John Thorn, Mr. Richard George Lane Head, Mr. J. Harvey, Messrs. Dove, Brothers, Mr. T. Ferguson, Mr. R. Thomas, Messrs. Thomas and William Stirling, Mr. Hall, Mr. J. Morris, Mr. Wilfred Nicholson, Mr. John Maw, Mr. W. Boutcher, &c.

In the absence of the President, Mr. Henry Lee, the chair was taken by Mr. Alderman and Sheriff Lawrence.

The Chairman, in proposing the health of the Queen, observed that we had the privilege of enjoying under her Majesty's reign the utmost amount of individual liberty compatible with order, and that when Englishmen drank the toast of "The Queen," they expressed their attachment and loyalty for a Sovereign who had set an example which might be followed with advantage by the other crowned heads of Europe.

The next toast, the "Prince of Wales," having been cordially responded to,

The Chairman gave "The Army and Navy, and Volunteers," observing that the toast was always a popular one, because the English people always considered that the army and navy belonged to the people. These services were proud of the good opinion of their fellow-subjects, and it was their desire to maintain that high reputation, which inspired them to those glorious deeds of valour which characterized the Army and Navy of England. The Volunteers were also especially entitled to the gratitude of the country, because it was mainly through their instrumentality that the Government had been able to dispense with a large standing army.

Captain Smith returned thanks on behalf of the Volunteers, observing that as their services would not be required except in case of actual invasion, he hoped that the day would never come when the Volunteers would have to take the field.

The Chairman then gave the toast of the evening, "Prosperity to the Builders' Benevolent Institution." He observed that, after having proved their loyalty to the Crown and their attachment to the army and navy, by whom peace was preserved, he now arrived at a toast which was of more importance to them, individually, than any of those which had preceded it. What could he say to recommend to their best attention the Builders' Benevolent Institution? Many of those whom he addressed were, no doubt, familiar with its history. All, however, who heard him, might not, perhaps, be aware that this was its fifteenth anniversary; and that there was no trade or profession which required a benevolent institution more than that to which so many of those whom he addressed belonged. There was, in fact, no trade in which there were so many fluctuations and vicissitudes. The practical experience of those whom he addressed would, he was sure, satisfy them that there were many changes of fortune in the building trade, and that many instances had occurred in which persons who were carrying on a large business, and who seemed on the fair road to fortune, had, by some misfortune, learned how vain were all their expectations. It would be found, too, in reference to the history of the Institution, that not only small men, but some of the largest in the trade, who reckoned their trade by tens of thousands, hundreds of thousands, and even, in one case, by sums exceeding a million, had eventually become applicants for relief from the Institution. These facts ought, he thought, to induce them all to take a warm interest in the society, as no man could tell what vicissitudes were in store for him; and, therefore, it behoved all those who were blessed with present abundance to lend a helping hand to an institution which opened wide its doors, as far as its funds would admit, for the relief of the less fortunate members of the trade, whose necessities might compel them to appeal to it. At present the sum of 8,353*l.* was invested, of which 6,006*l.* was to the credit of the relief fund, and 2,340*l.* to that of the building fund. There were thirty-five pensioners on the books, namely,—fifteen males and twenty females; and there were eleven candidates for the November election. The managers were disposed to admit three pensioners at the next election, as they reckoned with confidence on the liberality of the friends of the society on the present occasion. They felt persuaded that whenever the members of the building trade were assembled, and were assured that there was an urgent necessity for their benevolence, they would not be found wanting. When that appeal was made, he was persuaded that those who were blessed with fortune would not show themselves unmindful of their less favoured friends, and that, when once the society called them together, they would prove, by their acts as well as their words, that they were true friends to the Builders' Benevolent Institution.

The toast having been very cordially responded to,

Mr. Plucknett, the treasurer, said it now became his duty to propose a toast which he was sure all who heard him would drink with great cordiality and pleasure, namely,—the health of their excellent chairman. They were much indebted to him for his presence among them that evening; and he was sure it would be gratifying to that gentleman to reflect that this was the first charity dinner over which he had presided since he had been appointed to the high and honourable office of one of the sheriffs of the city of London. He (Mr. Plucknett) trusted that Heaven would long grant their chairman health to fulfil those important duties for the discharge of which he was so well fitted; and he was sure the friends of the Builders' Benevolent Institution were proud that they had one so highly gifted belonging to their body.

The Chairman, in returning thanks for the compliment, said he was much gratified at the kind and cordial manner in which his health had been drunk. He felt great pleasure in consenting to take the chair on the present occasion, because he felt that he could not refuse a request of the kind, coming from such a source as their president, Mr. Lee. It had previously been arranged that he should, in virtue of his office of sheriff, assist that evening in entertaining her Majesty's judges at the Old Bailey, but upon being requested to preside at the festival of the Builders' Society, he had communicated with the Lord Mayor, who was kind enough to say that in consenting to preside that evening, he was but doing his duty, and that he (the Lord Mayor), would take care to state that his absence from the judges' entertainment was to be attributed to an act of charity. Moreover, it was a source of gratification to him to think that on the first occasion since his election, he had presided at the anniversary of the Builders' Society. He trusted that whatever might be the position he was called upon to occupy, he would never forget his connexion with the Builders' Society, and ever remember his association with the many friends who took an interest in its welfare. He trusted that Providence would give him health to show that, while holding the distinguished office of one of the sheriffs of the City of London, he would be as willing to assert the rights and privileges of his fellow citizens as to assist in extending the many charitable institutions of the metropolis, and promoting works of benevolence among all with whom he might be brought into contact.

The next toast was "The President of the Institution;" and in giving it,

The Chairman observed that every one knew that Mr. Lee's heart was in the right place, and that he had conferred the greatest benefits upon the Institution. He was sorry Mr. Lee was prevented by indisposition from being present, and he was sure they would drink to his better health, and couple with it the sincere expression of their hope that he might long be spared to take an active part in the affairs of every charitable institution with which he was connected.

Mr. George Lee returned thanks on behalf of his father, and assured those who had so warmly responded to the toast, that the president of the Society had its best interests at heart.

The Chairman said that the next toast on his list was "The Architects and Surveyors." He was sure that he gave expression to the sentiment of those who heard him, when he stated that they were pleased to see among them that evening some members of a profession to which the builders of London were deeply indebted. He did not know anything in which the builder more delighted in carrying on his operations, than to observe the skill of the design submitted to him; and he was convinced that nothing gave him more genuine pleasure than to work to the wise designs of an able architect. He therefore trusted that, whenever the builders met together, they would find among them, and welcome as friends, the members of the architectural profession. He was glad to be able to associate with the toast a name as well known as it was universally respected,—that of Mr. I'Anson. It was a familiar name to most of them, and, indeed, to the builders of London generally, who were always gratified at having relations with Mr. I'Anson. He therefore proposed the health of the architects and surveyors, coupling with the toast the name of their respected friend, Mr. I'Anson.

Mr. I'Anson, in acknowledging the compliment, said that he felt very grateful to the chairman for the kind manner in which he had referred to his name, and to the company for the cordial way in which they had responded to the toast. He might say, on behalf of the architects and surveyors, that they felt that they were banded together with the builders in directing some of the most important social works which any country could carry on. They directed in common a large amount of capital, and the energy and strength of a great number of their fellow-countrymen. Their enterprises demanded the exercise of refined conception and artistic skill; with regard to the latter, they could not fail to call to mind the exertions of such men as Skidmore, Minton, and others, who had done so much of late years to improve and elevate the public taste. He remembered being struck with an observation made by an architect to some of his colleagues in the profession, when contemplating finished work, that in days to come the beholder would inquire, not who was the architect of the building, but who were the artificers. The architect had not only to bring to his work artistic thought, but critical judgment. He had not only to look judicially and carefully, but judge honestly and conscientiously between the builder and his client. As a body they had also to wield thoughtfully a large amount of capital, so as to deal with it financially in a careful manner, and in addition, they had to deal with the occasional turbulent commotions of large bodies of their fellow-countrymen. Having all this to do, he trusted that they would all conjointly discharge their duty to the British public, and at the same time reap the rewards to which they were entitled.

The Chairman next gave "The Health of Mr. Thomas Cozens, the Founder of the Institution," and observed that it must be a most gratifying circumstance to that gentleman to find that the society was making steady progress, and had more than realized the expectations of those who had been its original promoters.

Mr. Cozens, in responding to the toast, said that the very fact of the present being the fifteenth anniversary festival of the Institution, was in itself a gratifying circumstance. To himself personally, as being a very humble individual in the trade, it was also a source of satisfaction to find that he had been instrumental, with the assistance of friends, in realizing a sum of money which had been made available towards the necessities of their less fortunate fellow-labourers. The society was now in a position that left no room for any apprehension as to its stability. It was now fairly established; and so long as its friends continued to gather round it as they had done that evening, there could be no doubt of its permanent prosperity.

The Chairman then gave the health of Mr. Plucknett, the treasurer of the Institution, and

observed that the sincerest pleasure which they could give that gentleman, and the best manner in which they could exhibit their gratitude for his services, was to place in his hands a liberal subscription that evening.

Mr. Plucknett having returned thanks for the honour done him, said it was true as stated by the chairman, that the trustees of the Institution had the sum of 8,000*l.* funded to its credit. This however, was but a small sum, regard being had to the importance of the trade and to the pressing claims upon the benevolence of its members. When he called to mind the great wealth of many of those belonging to the building trade, and to the fact that the Institution had been established upwards of fifteen years, he thought he was justified in saying that more might have been done. He trusted, however, that the next and following years would show a considerable increase in the funded capital of the Society.

Mr. Harris, the secretary, then read a long list of donations, amounting in the whole to about 520*l.* The following were among a few of the donors:—The President of the Institution, 50 guineas; the Chairman, 20 guineas; Mr. Allchin (late of the firm of Cubitt & Co.), 100*l.*; Mr. Joseph Bird, 5 guineas; Mrs. Joseph Bird, 5 guineas; Mr. H. W. Ferguson, 5 guineas; Messrs. Lawrence, Brothers, 10 guineas; Mr. Thomas Brassey, 5 guineas; Messrs. W. Cubitt & Co., 10 guineas; Mr. G. Jennings, 5 guineas; Messrs. Lee, Son, & Smith, 10 guineas; Messrs. W. & J. Freeman, 10 guineas; Mr. Edward I'Anson, 10 guineas; Mr. G. Myers, 5 guineas; Mr. John Barnett, 5 guineas; Mr. D. Murray, 5 guineas; Messrs. Dove, Brothers, 7 guineas; Messrs. Smith & Hill, 5 guineas; Mr. Thomas Lambert, 5 guineas; Mr. Charles Hack, 3 guineas, &c., &c.

The Chairman then gave "The Brighton Branch of the Institution,—the Chairman, Directors, and Honorary Secretary," and expressed his gratification at the progress which it had made, and his hope that it would continue to increase its usefulness in connexion with the parent stem.

Mr. Joseph Bird observed, in reply, that, as he had been the person to introduce the Institution to the builders of Brighton, he thought he ought to return thanks for the honour which had been done them. He hoped the Brighton branch would steadily increase, and realize the expectations formed of it.

In proposing the "Health of the Committee," the Chairman spoke in suitable terms of the obligation which the Institution was under to those gentlemen who had devoted so much valuable time to its interests, and through whose instrumentality much of its success was to be attributed.

Mr. John Thorne returned thanks on behalf of the committee, and observed that they were amply rewarded for any trouble and loss of time incurred by them, by the reflection that the Institution continued to prosper and to enjoy the confidence of its members.

One or two other toasts of a complimentary character followed, and the company separated.

COMPRESSED AIR AS MOTIVE POWER.

In reference to a paragraph in our issue of 18th October, titled "Compressed Air as Motive Power laid on like Water," a correspondent, Mr. J. Newton, suggests that the power of the tides might be made useful in the production or accumulation of such power at little or no working cost. For London he proposes that the power should be generated at Greenwich, where a tunnel, lined with iron, could be made underneath the Park-hill, as a power-reservoir, with pressure-modifying apparatus, by means of which the compressed air could be safely conducted through tubes to town. At a time when parcels, and even human beings, are blown through tubes by means of exhausted air, there are more unlikely schemes than this. The idea of using the power of the tides for the compression of air is an exceedingly feasible one; and if it should turn out that the Liverpool experiment is a successful one as regards the practical uses of such a power, this idea might prove to be of substantial service in a pecuniary sense. Tide power might even be made available for the production of power by the exhaustion of air, as with the Pneumatic Despatch Company, as well as in various other ways;—as, indeed, was long since suggested in a general form by an American projector. There was a German Baron, however, who made strenuous efforts to introduce compressed air (in iron retorts) for locomotive purposes, but nothing came of it. Our correspondent, Mr. Newton, has in view the supply of self-moving cabs, velocipedes, &c., by means of some such power, as suggested in the *Builder*; as well as for fire and stationary engines.

QUEEN'S CROSS, NORTHAMPTON.

A fortnight since you inserted a paper, read by Mr. Law, on this subject, the objects of which were to vindicate the purity of the Cross, and to attack me.

The whole matter had been, as I think, exhausted locally; and I presume the paper was sent to you so as to serve the purpose of attack in a new and extended form. The extensive circulation of your journal renders it necessary that I should offer to you, as I have done to the Northampton newspapers, some reply to the violent displays which are made against me for simply having propounded an unpleasant truth.

In August, as your report of the proceedings shows, the British Archæological Association visited Northampton for one day, and the Cross was viewed. It did not happen, however, that the learned antiquary who was selected to give its history was an architect; and I, as an officer of the Association, expressed, pretty decidedly, my judgment upon some of its details. Unfortunately, Mr. Blore's name was put into my mouth by one of the local *savans;* and I attributed all the variations from the purity of the work to his pencil, and hence the attacks on me.

There are many parts of absolute baseness of design, and which no more belong to the original Cross than do the west towers at Westminster to the Abbey; but it has been since discovered that two extensive "restorations" were made in Queen Anne's and George the Third's time. No doubt some *amende* was due to Mr. Blore for having supposed him capable of perpetrating such enormities as were considered good in 1713 and 1762; and I have already made it, as an honest antiquary should do; but there is still this to add, that Mr. Blore *did* copy some of the details, and kept to the principles of the false restorations of the previous ages.

Mr. Law's paper throughout bears the impress of a deprecating spirit, as though he knew perfectly well that it has suffered; indeed, he directly admits it in another part of his lecture, and leads his readers, nevertheless, to infer that from his intimacy with Mr. Scott, that gentleman agrees with him. I should like Mr. Scott, who *does* know good from bad, to undeceive the lecturer.

I must, in conclusion, disclaim any assumption of superior knowledge. We are all now aware that the Gothic of Mr. Blore's time was small as compared with the present; and we most of us know of the earliest Gothic work of our regretted Barry, and how much lauded that work was, and how much the school would now give if they could destroy the evidence of the ignorance of its principles thirty-five years ago.

Of the Gothic (!) of Queen Anne's reign, no reader of this time would require me to say anything. It is, unhappily, too often visible in the restorations of our most beautiful monuments, and much more frequently met with than even antiquaries are yet aware of. I have constantly to point it out to audiences, and have that regret which every lover of Mediæval work must have at seeing the best specimens ruthlessly tampered with by zealous but incompetent workmen. My professional engagements have prevented an earlier reply, and now preclude me from entering into minutiæ. The Association's Journal will contain an account of my opinions, and to that I must refer Mr. Law, and all others interested in the dispute.

Edward Roberts.

MOSAICS *versus* FRESCOES.

The Great Exhibition has, for the first time in the history of one branch of art, challenged the inquiries of those who are interested in the beautiful art of pictorial *mosaic* decoration.

The designs of Messrs. Hook & Cope, on the external walls of the building, intended as an experiment, are to be executed in mosaic work.*

The exquisite mosaics in the Roman and Russian Courts; the pavement in the Ceramic Court of Minton; and the mosaic, executed by Messrs. Maw;—all indicate that the time has arrived when the subject of *mosaic illustration* is destined to inspire a new impulse into the public mind.

When we consider how wonderfully certain foreign and British mosaics have been preserved for nearly 2,000 years;—how they embody the history, the mythology, the costumes, and customs of ancient peoples;—it leads irresistibly to the conclusion that they are well adapted to preserve to the remotest posterity, by pictorial representations, the great events in the history of this country. "*Esto perpetuum*" seems the appropriate motto of the mosaic fabric.

The incidents of British history, the Druidical or British period; the invasion of the Romans, the Saxons, the Danes, and the Normans; the granting of Magna-Charta; the institution of the Garter; the Spanish Armada; and other notable events of history, which relate to the Reformation, the Revolution, &c., and which constitute the organic changes of the political life of our country; or those special events which are landmarks in the nation's progress, could as easily be pepetuated to the end of time, as similar monuments have been handed down to us, in the imperishable mosaics of Carthage and Halicarnassus, of Italy, France, Spain, and Britain.

The mosaics of Britain have never been sufficiently investigated, either as works of art, or as remarkable evidences of the history of this country coeval with the literature of the post-Augustan age.

Recently, a discussion in the House of Lords, on the subject of Frescoes in the Houses of Parliament, elicited the fact that the greater part of the frescoes have perished, or are in the process of decay; and notwithstanding the great cost of the works, they appear to be a great failure, not so much from the want of skill of the artists employed to design them, as from the inevitable decay incidental to the climate, and from the alteration of colour by chemical decomposition. Whatever may be the facts connected with their deterioration, it was stated that they were fast decaying.

Fortunately for the artistic resources of this country, there are proved means by which the same grand objects of the frescoes can be carried out in the adoption of the mosaic art.

Let us examine a little what the mosaics are and what experience has shown regarding them. The method of pictorial representations by mosaics is one of very ancient date: it was practised by the Persians, Phœnicians, Greeks, and Romans, and by the latter with singular success. In early times, the Persians, as mentioned in the book of Esther, and the Greeks, used marble as the ordinary material, varied with beautiful stones, porphyry, granite, the rosso-antico, giallo-antico, and verd-antico: even precious stones were occasionally used for particular parts. In Mediæval times gold and coloured glass have been much adopted.

In Britain the mosaics are chiefly constructed of natural stone, brick, and other clays, hardened in the furnace, and coloured by heat acting on the oxides of metals. The numerous and remarkable specimens of mosaics in Britain are well worthy of consideration. Those discovered at Bignor, at Woodchester, Cirencester, Wroxeter, Caerleon, Horkstow, and, indeed, over all England, show how extensively the Romans adorned their public buildings, their palaces, halls of justice, temples, theatres, and baths, as well as the private villas of generals and prefects. In the flowers of *spring*, representing one of the four seasons in the mosaic at Cirencester, the ruby has been found, as stated by Messrs. Newmarch & Buckman, in their elegant "Remains of Roman Art;" and in the breast of the peacock found in Leadenhall-street, a rich dark-blue glass has been employed. I need scarcely refer to the splendid ancient mosaics of Italy, those in Rome, in the Vatican, the Baths of Diocletian, Titus, and Caracalla, and the Villa Borghèse; those in Naples and Pompeii, from which latter place some fine examples are now to be seen in the Temple collection in the British Museum. There are two governments which have taken under their special care the mosaic art,—the Papal and Russian. The traveller who has visited Rome will be astonished to see the splendid modern mosaics in St. Peter's and St. Paul's, which rival the glorious pictures of Raffaelle and Michelangelo, and other great masters of Italy.

The Papal Government has shown great foresight and judgment in executing mosaics, for these will endure when canvass and oil, and frescoes have passed into oblivion; when "the effacing fingers of time have not left a trace behind" of those perishable materials.

Happily we have a proof and a guarantee that mosaics can now be made which, for variety and richness of colour, for brilliancy and indestructibility, equal if not surpass any mosaic composition

* Much improved, we hope, or not at all.—Ed.

and it now becomes the duty of the Government to use this noble art.

The example of constructing mosaics in our public edifices is about to be set by making no less than eight mosaics in St. Paul's cathedral, in London; a most praiseworthy and enterprising effort. St. Paul's and St. Peter's at Rome contain numerous splendid mosaics illustrating Scripture; and we may take some shame to ourselves for our unaccountable apathy, while the Papal Government has made such extraordinary efforts with small pecuniary means; whereas we possess unlimited wealth and artistic capacity.

It is lamentable that the great mosaic of the Seasons has been placed in a bye corner, among tiles where no one passes. That important specimen of British art ought to have been placed in the most conspicuous part of the Exhibition.

R. WOLLASTON, M.D.

THE PAYMENT OF ARCHITECTS' ASSISTANTS.

SIR,—Seeing that "a contented mind is a priceless treasure," I am glad to find that all assistants do not consider themselves so hardly dealt with as my inquiries amongst them led me to imagine; some, no doubt, thinking with the ancient Brahmin that "to be satisfied with a little is the greatest wisdom; for he who increaseth his riches increaseth his cares." But I must say that I do not see anything very encouraging in "An Architect's Assistant's" letter of last week, the purport of which is, that, after five years' study as a pupil, and an outlay by my friends of from 500*l.* to 1,000*l.*, I am worth, supposing I have exerted myself and acquired a thorough knowledge of my profession, but 150*l.* per year at the utmost; so that if I cannot command a practice, this is my doom for life: married or single, 150*l.* per annum is the *summum bonum* of my existence. Married, did I say? But how is this possible, seeing that the sum named is totally inadequate to support a wife in the position from which it may be assumed I should take her? Moreover, how could the children of such a marriage be educated? Could they be articled to any of the learned professions? ("God save the mark!") Could they be fitted for the Church or the Bar?

> "But stay; what right have I to wed? Love's for the gilded great;
> For those form'd of a nobler clay, who dine off golden plate."

At least so it appears, if the architect's assistant is not to stand higher, in a pecuniary view, than where your correspondent considers he is now fairly placed. But to the ground of complaint.

An architect's work is essentially personal, and his need for an assistant only arises when the work so crowds upon him that the call upon his time is greater than a prudent regard for his health permits him to bestow. The ability of an assistant, therefore, depends greatly upon that of the architect; that is, the architect will satisfy himself that the assistant's course of study has been the same as his own; that his taste has been tutored to the same ends, and his experience, as far as it goes, has led him to the same results; that the two minds, in fact, are shaped in the same moulds, so that his ideas can be grasped and worked out so successfully that he will not be ashamed to own them when the conception is matured. In short, he will be satisfied that he can safely delegate to his assistant the work confided to himself. For the work so performed a certain charge is made; and I maintain that this charge, less a moderate profit, and the expense of office, &c., should form the basis of an assistant's salary; for I have yet to learn where else the labourer does not receive the benefit of the public marketable value of his work, whether that work be mental or manual. It is well known that, taking the year round, the assistant does not receive a fourth of the amount paid for the work he performs. Ere the architect complains of the unremunerative character of his labour, let him see to it that he does not lower its value in the eyes of the public by the ungenerous return he makes for that labour when performed by one depending upon him.

I have founded my letter hitherto upon your correspondent's statements; but here let me take exception to them; for in the whole course of my experience I have found but few qualified assistants who receive more than about 100*l.* per annum for working, not from "ten to four," as assumed by your correspondent, but from nine or half-past nine to five. Now that the Institute has taken upon itself to see that assistants are properly qualified, would it not be as well for them also to see that they are properly paid?

Z. P. S. Y.

SIR,—I am quite prepared to believe that your correspondents who have written to you on this subject have real and serious cause of complaint. Will you allow me to point out to them a means of to some extent improving their condition, which is now for the first time about to be placed within their reach?

An architectural assistant, *known* and proved to be competent and well-informed, can generally command a fairly good salary. The difficulty is to establish the claim to such a salary. Should your correspondents be young men whose ability, education, and skill are such as would fairly entitle them to a higher salary, or, at least, to a moderately good one, they will, no doubt, be able to pass the Institute voluntary architectural examination next January. Let them do so; and the day the list of successful candidates appears, let them ask for the salary they think they ought to get. I will engage to say that, if it is at all at a reasonable rate, that salary will be at once forthcoming,—if not from their present employer, certainly from any employer capable of appreciating the test now about to be established; or, in other words, from almost every respectable architect in the kingdom.

The incompetence and limited knowledge of many youths are the reasons of their salaries being so low. So far as this is their own fault, they must abide the consequences. If in any cases it is more the fault of others, the young men are sincerely to be pitied; but they may, by exertion and diligence, succeed, without doubt, in remedying their misfortune.

TRISTRAM.

WHAT IS A "WITHE?"

METROPOLITAN BUILDING ACT.

MR. R. CLEAVE, builder, of Chenies-street, was summoned by Mr. C. Fowler, district surveyor, for an alleged infringement of the 14th clause, 20th section, of the Metropolitan Building Act. The district surveyor said the defendant was doing certain repairs and alterations to a house in Great Russell-street, Bloomsbury; and in some of the upper rooms new fire-places were being constructed against a party wall 14 inches thick. These fire-places were carried on stone corbels projecting 9 inches from the face of the party wall, and a thickness of 4½ inches was cut out, leaving 9 inches at the back; chases 4½ inches wide were then cut in the party wall vertically, and the new work built up and secured to the old wall. The Building Act required that a "withe should be properly secured to the party wall at least 4½ inches thick." His view of the meaning of this was, that a thickness of 4½ inches new work should be built against the old wall and parallel thereto, thus forming the back of the flue entirely of new work. Mr. S. Hewitt, who appeared for the defendant, contended that the chimneys were built in strict conformity with the Building Act. He found authorities all to agree in considering the word "withe" to mean a division between two or more flues: some actually gave it as the "vertical division or partition between flues." He could also refer to the Building Act itself, which would show that this view was correct. In the 6th clause of the same section the several parts of a flue were distinctly enumerated. This clause seemed to show that the original framers of the Act of Parliament knew pretty clearly the meaning of the term "withe;" and, according to this clause, the part of the flue which Mr. Fowler required to be new is called the "back." Mr. A. Newman, Mr. C. Sewel, and Mr. J. Johnson, architects, corroborated this view of the case. Mr. Corrie decided that the defendant had constructed the flues in conformity with the Act of Parliament, and dismissed the summons.

EARTH CLOSETS AND STEAM STOVES.

THE Rev. H. Moule, vicar of Fordington, Dorset, an account of whose sanitary and economic inventions we have already given in the *Builder*, has issued a new edition of some of his pamphlets on the subject. Improvements have been made in his patent earth-closets, which are now made self-acting in one form, and workable with a screw arrangement in another, for transferring the soil to a shaft, dry cesspool, or other place of deposit. He has also made his patent vapour-fed stoves applicable to frames and hot-houses, and thinks they would also be suitable for churches and halls. The chief object of the steam, as our readers may recollect, is to aid in the production of heat in the stove so as to economize the expenditure of fuel. The dry-earth closets must be a decided improvement in rural districts, where there are often not even decent cesspools, far less drainage; but we cannot agree with the rev. inventor that it ought to take the place of drainage in towns, far less in London; even to which he appears to desire its application. Did he ever estimate the quantity of dry earth per annum with which it would be requisite to supply the metropolis (or even any large town) on his system? It is not on this account, however, that we object to such a system in towns. Were the theoretical operation of his closets to be always depended on in practice, including perpetual and universal care and attention as to the supply of earth, thorough deodorization, and other circumstances, the offence to sense and health *might* not be very great; but the rev. inventor does not seem to make sufficient allowance for inevitable, wide-spread, and perpetually-recurring neglect, indolence, recklessness, and ignorance, which would to a certainty render his system one of the most abominable town nuisances in existence,—worse even than cesspools.

COMPETITIONS.

Dublin Winter Garden.—Several competitors are asking as to the decision. We have not been informed of it.

Cork Cathedral.—A correspondent says (we give his opinion for what it may be worth), that out of the sixty-eight designs submitted, the following, not placed in order of merit, deserve special attention:—"Truth," "Labor ipse voluptas," "Is it time for you, O ye that dwell in your ceiled houses, and this house lie waste?" "Con amore," "Peace be within you," "Experience," "Laus Deo," "Esto perpetuo," "Proportion," "Prêt d'accomplir," "Non nobis Domine," "Most heartily do I beseech the Court to give judgment," "Salvis," and four marked with monograms, viz.—A fish, 209 in shield, a circle with apertures in it, and a triangle in a circle. The drawings will be exhibited for some time.

Surrey County Hospital.—The designs have been referred to a sub-committee. It is understood that as soon as their report shall have been delivered, and the decision of the general committee come to, arrangements will be made for the exhibition of the designs.

DEMOLITION OF A HOUSE: METROPOLITAN MANAGEMENT ACT.

AT Wandsworth Police-court, Mr. Henry Cooper, of Upper Tulse-hill, Brixton-road, appeared before Mr. Ingham to answer an adjourned summons, at the instance of the Wandsworth District Board of Works, for the non-payment of 6*l.* 18s. 6d., being expenses incurred for demolishing a portion of a new house, erected by the defendant in the Lower Atkin's-road, Clapham Park, without giving seven days' notice in writing, as required by the 76th section of the Metropolis Local Management Act.

On the first hearing of the case, Mr. Robinson, the barrister, instructed by Mr. Corsellis, the clerk of the Wandsworth District Board of Works, appeared in support of the summons; and Mr. A. S. Edmunds, for the defendant. On the present occasion Mr. Robinson did not attend, and the case was conducted by Mr. Corsellis.

The case for the Board was as follows:—During the last four years the defendant and his father, who reside at Peckham, have been engaged in building operations in the district. On three separate occasions, in erecting a house in the Atkin's-road, Mr. Cooper, sen., failed to give the Board the proper notice; and in the correspondence that afterwards took place between the parties the defendant acted on behalf of his father. After the third instance of neglect a letter was sent to Mr. Cooper, sen., informing him that if he commenced to build another without notice the Board would proceed forthwith to demolish it. About ten days before the meeting of the Board, on the 30th of July last, Mr. Johnson, the surveyor to the Board for the parish of Clapham, heard that a fourth house was being erected without notice. On the 26th he visited the works, and measured as to the line of frontage. On the 28th he made a report to a committee of the Board; and at the ordinary meeting of the Board, on the 30th, they issued directions for the demolition of the house. On the following evening, from seven till eleven o'clock, men were engaged in carrying out the Board's order; and the building, which had reached the first story joist, was knocked down. The amount claimed was for the cost of the works; and it was submitted that the charges were reasonable.

At the onset Mr. Edmunds informed the Court that an action had been brought against the Board for the trespass, and he asked for an adjournment of the summons until the cause had been tried.

Mr. Corsellis said that the Board had adopted the present proceedings as being the most inexpensive mode of trying the question.

Mr. Ingham refused to comply with Mr. Edmunds's request, and the case proceeded.

For the defence it was stated that the defendant had nothing to do with the other houses; but even in those cases the proper notices were sent to the Board. The defendant admitted that he was the builder of the house in question; and he swore positively to posting a notice to the Board on the 5th of July, stating that he was getting out the ground, and that he would commence building on the Monday (the 7th). He stated, however, that he commenced on the 8th.

Mr. Corsellis and a number of witnesses were called, to prove that the letter containing the notice was never received.

Mr. Edmunds then took several legal objections. He contended that he had complied with the Act in giving notice, and also that the defendant was not bound to wait seven days after giving such notice before he commenced. He also argued that the Board were bound to give them

notice before they demolished, and that the law never contemplated that they should be the administrators of the law.

With reference to the latter argument, Mr. Ingham called attention to the 211th clause of the Act, which gave the defendant power to apply to the Metropolitan Board for compensation within seven days after the act of the District Board.

Mr. Edmunds took other objections, one of which was that by the 82nd section it was required that all works should be done properly in the day-time; and he argued that the works of demolition were unlawful, as they were carried out in the night-time.

Mr. Ingham went through the various objections, and decided against the defendant, subject to a case in the Court of Common Pleas. He made an order for the payment of the money and 5*l.* costs.

Mr. Edmunds then put in the necessary bail for the prosecuting of the case.

PATENTS CONNECTED WITH BUILDING.*

Improvements in Screw Wrenches or Spanners.—*P. B. O'Neill.* Dated Jan. 6, 1862. Here, when constructing a wrench, the inventor employs a suitable rod or metal bar, one end of which is formed as a handle, and the other end is forked. To the ends of the two prongs of the forked bar one jaw of the wrench is fixed firmly: the other, or movable jaw, has a slit formed in it, through which the prongs of the fork pass; so that the movable jaw may be capable of sliding on the forked bar towards or from the fixed jaw. For securing the movable jaw two spring catches, turning on a pin or pins, are fitted into the slot through the jaw, so that they stand in the space between the prongs of the forked bar, and teeth are formed on the inner sides of each prong of the fork for these catches to take into. Hence, in order to shift the movable jaw from one position to another, it is only necessary to free the spring catches from the teeth on the forked bar to slide the jaw to the position required, and allow the catches again to drop into the teeth. Modifications are included.

An Improved Mode of and Apparatus for Propelling by the Agency of Electricity.—*H. Cook.* Dated Jan. 8, 1862. The patentee claims the application of the tractive power of electric coils to cause an armature of iron constructed in the form of a hollow vessel casing carriage (made to contain articles of various kinds) to pass along a continuous line of rails placed within and extending throughout series of tubular electric coils, as herein set forth.

Improvements in the Construction and Fitting-up of Stalls and Horse-boxes.—*J. Carrington.* Dated Feb. 8, 1862. Here the object is to provide stables with stalls or boxes, and fittings of an improved construction, which, amongst other advantages, will admit of being readily removed, when required, without defacing the walls of the building to which they are applied; will give increased facilities for flushing drains; and provide an efficient means for accustoming young horses to the bit. The invention can not described apart from the drawings.

Improved Modes of Protecting Iron Boilers, Tanks, and Vats from Wear arising from Galvanic Action.—*G. T. Bousfield.* (A communication.) Dated Feb. 19, 1862. This consists: 1, in interrupting the galvanic action which is produced in iron boilers, tanks, vats, &c., by their connexion with pipes, pumps, condensers, faucets, or other fixtures of brass, copper, or other metals electro-negative to iron, by the use of insulating joints, by which the two metals are separated by a packing of indiarubber or other non-conducting substance; 2, in arresting and depositing from the water, before it is admitted to the boiler, tank, or vat, the copper or other metallic salts held in solution by it, which it has taken up in its contact with the copper or brass fixtures through which it has passed, by first passing the water through a vessel containing zinc in small pieces, or its equivalent in galvanic properties, on which the copper or other metal negative to iron will be deposited, and not be carried into the boiler or tank to produce there a galvanic action, so destructive to the iron vessel.

Miscellanea.

Kingston-upon-Thames.—In knocking down the western front and pediment of brickwork which disfigured the parish church, a Norman doorway has been brought to light. It is found that it cannot be restored.

Water-Purifying Apparatus.—The apparatus referred to by us on 18th ult., in an article on "Domestic Water-filtering," is said to have been invented by Mr. F. Hahn Danchell, of 38, Red Lion-square, a Danish engineer.

* Selected from the lists published in the *Mechanics' Magazine*, and the *Engineer*.

Wesleyan Chapel in Paris.—A new Wesleyan Chapel was opened a few days ago, near the new Boulevard Malesherbes, close to the Madeleine. It is Gothic, with some architectural pretensions. It has cost, we are told, about 5,500*l.* The Rev. W. M. Punshon, of London, preached a remarkable sermon on the occasion.

The Clock-tower at Plymouth.—The tower in course of erection to receive the clock presented by the mayor is nearly completed, and the *Devonport Independent* gives an engraved view of it. The tower is built of limestone up to the bell-turret, which, with the spire, is to be formed of ornamental ironwork. About half way up the tower on each side there is a device with the borough arms, cut in Portland stone; and on each of three sides of the base there is a drinking-fountain, with an entrance-door in the fourth side, by which access is gained to the interior of the structure. The height of the tower to the top of the spire will be 56 feet; the height to the base of the bell-turret 39 feet 6 inches. Messrs. Call & Pethick, builders, Plymouth, are the contractors for the erection of the tower; which will be completed for the sum of 314*l.* The ornamental stonework has been intrusted to Messrs. Tucker & Ross, of Plymouth, statuaries; and the ironwork has been cast at Moir's foundry, Stonehouse. The tower was designed by Mr. H. Hall, architect, London.

Accident in Tooley-street.—At the premises in course of reconstruction which were destroyed by the great fire on the 22nd of June, 1861, three of the arches just completed, or nearly so, each 417 feet long, and abutting upon the waterside, have, one after the other, given way. Three men, who were at work at the time nearly under them, were completely buried amid some tons' weight of bricks and mortar. One man was taken out alive, but so much injured that it became necessary to remove him to Guy's Hospital. Two other unfortunate men were found to be completely imbedded in the ruins, and a considerable time elapsed before they could be got out, and then both were found to be dead. The cause of the accident is not precisely known; but from the examination made by the district surveyor, he ascertained that men had been engaged driving piles into the river during the day, and the inference was that the vibration caused upon the shore of the river had so shaken the foundations of the arches as to make them give way; and in consequence he gave orders that no more piles were to be driven in at present.

The New Opera-house, Paris.—The works of this vast edifice, says *Galignani* (supplementing our article of to-day), are proceeding with grea activity; and a considerable portion of the structure already rises above the level of the soil. We say already, although it has taken a whole year to arrive at this point, owing to the immense difficulties with which the architect, Mr. Charles Garnier, has had to contend. It is not generally known that the whole quarter of the Chaussée d'Antin is built over a sheet of water, covered with a solid crust 6 mètres in thickness. All the houses of the quarter rest upon this crust, as their only support; and the new Opera-house might have been built upon it equally well, without any danger of its giving way, were it not that it was necessary to secure sufficient depth below the stage for the scenes. The old Opera-house has a depth of 11 mètres below, which is utterly insufficient, since a tree, for instance, must be made up of the trunk rising from below, and a fly coming to meet it from above; but as the upper part rarely coincides with the lower, the effect is disagreeable. Mr. Garnier had his choice of either raising the stage or lowering the foundations, in order to obtain the requisite depth of 14 mètres. But the level of the stage is already so high, and the number of steps to be mounted in order to reach even the first tier of boxes is so considerable, that it would have been very unadvisable to increase that height; so that nothing remained but to sink the foundations to the level of the water beneath; and it became, therefore, necessary to proceed to the herculean task of imprisoning a sufficient portion of the subterranean sheet of water within four strong walls, resting on iron-shod piles driven into the earth, and then emptying out the water by means of four powerful steam-engines. But this was not enough: the portion of the main walls destined to remain under water had to be protected against the infiltration of moisture, which would infallibly have spoiled all the scenes. For this purpose a double row of piles was driven in all round the foundations: the space between the two rows was sunk to a sufficient depth, and the earth replaced by a mass of concrete, which now effectually separates the walls from the surrounding water.

Fever at Boston, Lincolnshire.—Typhus fever, we regret to learn, has made its appearance in Boston. No time should be lost in giving careful attention to cleanliness in streets and dwellings, and also to ventilation, especially of bed-rooms.

The Middle Level Drain.—Nine out of the sixteen syphons which are to be substituted for the destroyed sluice have been placed over the dam, and have on more than one occasion been got to work, discharging an immense quantity of water; but whether, when complete, they will be sufficient to carry off the vast stream which flows down the drain after long-continued rains is a question on which, according to the *Norfolk Chronicle*, very serious doubts are entertained by many practical men.

Wood Dye.—Mr. Em. Monnier recommends the following method for dying wood of a rose colour by chemical precipitation:—A bath A is prepared with 80 grammes of iodide of potassium per litre of water; and a bath B in another vessel with 25 grammes of bi-chloride of mercury. The wood to be dyed is first put into the bath A, where it is left for several hours: it is then dipped into the bath B, when it assumes a beautiful rose colour. The wood thus dyed is afterwards varnished. The baths will last a long while without any necessity for renewal.

Gas.—A Dover gas consumer having recently written a letter to one of the local journals, complaining of the quality of the article supplied, and suggesting new works, the lessees of the Dover Gas Works (Messrs. Anderson & Jones) have had the impudence to commence an action against him. The public have begun an indignation subscription; and there is little doubt that considerable opposition will arise to a renewal of the gas contract when it expires; and that Messrs. Anderson & Jones will shortly be made to feel as if they had brought a nest of hornets about their ears. —— New gas works, in Botesdale, erected by Messrs. Porter & Co., of Lincoln, from plans by and under the superintendence of Mr. Methven, of the Bury Gas Works, have been opened. The works are situate nearly in the middle of the town.

The Glasgow Cathedral Windows. — The work of filling in stained glass into the windows of this cathedral is still going on. Another addition to those already erected in the aisle has just been made. The donor is Mr. A. Campbell, of Blythswood, and the artist Mr. George Fortner. It is of Munich manufacture. The subject is, "Suffer little Children to come unto Me;" and as in the other windows containing precepts of our Lord, in this an angel hovers in the upper part of the centre light, bearing the text. Beneath is a group representing a Christian family. As a means of expressing that the invitation is to all, in the other lights of the window the red and black races are bringing their children to the Saviour. No. 18 in the nave is about being completed. The artist of it is Mr. Henry Ainmiller; and the donors are the Messrs. Lumsden, of Glasgow. The subjects are—1st, Esther and her uncle Mordecai; 2nd, or centre, Esther crowned Queen; 3rd, Esther entreats for her people. In the choir window the background of the centre group is a view of the east end of the Cathedral. The group is surrounded by verdure and flowers.

Architect and Builder.—There is a story on record of an architect insisting on the difference between a builder and an architect, in the case of the late Mr. Alexander, the architect of various buildings in the county of Kent. He was undergoing a cross-examination in a special jury case at Maidstone, by Serjeant (afterwards Baron) Garrow, who wished to detract from the weight of his testimony; and who, after asking his name, proceeded thus:—"You are a builder, I believe?" —"No, sir; I am not a builder: I am an architect."—"Oh, well! architect or builder, builder or architect: they are much the same, I suppose?"—"I beg your pardon, sir, I cannot admit that: I consider them to be totally different." —"Oh, indeed! Perhaps you will state wherein this great difference consists."—"An architect, sir, prepares the plans, conceives the designs, draws out the specifications—in short supplies the mind. The builder is merely the bricklayer or the carpenter: the builder, in fact, is the machine; the architect the power that puts the machine together, and sets it going." —"Oh, very well, Mr. Architect — that will do! And now, after your very ingenious distinction without a difference [foolish barrister], perhaps you could inform the court who was the architect of the Tower of Babel?" The reply was as smart as it was prompt,—"There was no architect, sir; and hence the *confusion*."

Regimental Memorials. — Mr. Richardson, sculptor, has just forwarded to Cawnpore a duplicate memorial to the one he executed for the 32nd Light Infantry, in Exeter Cathedral. As a coincidence, the Cawnpore tablet was shipped on the day announcing the decease of the gallant colonel of the 32nd regt., Sir John E. M. Inglis, K.C.B., &c., who took a deep interest in these memorials. Mr. Richardson has also, among other works in hand, two regimental memorials for the 31st regt., now serving in China, to officers of that regt., deceased.

A Heavy Forging.—Messrs. Peel, Williams, & Peel, of the Soho Ironworks, Manchester, have just completed a main shaft for a water-wheel, measuring in length 30 feet, and in diameter 22 inches. This mass of metal has been made entirely of small scrap iron, and now weighs 13 tons. The men have been working at it night and day, and have managed to turn it out in about nine days; a steam-hammer weighing seven or eight tons being employed to beat the metal together. The wheel for which it is intended will weigh eighty tons.

The London Crossings and the Commission of Sewers.—A subject which has occasionally been urged in our columns for years is at last forcing itself upon the notice of the authorities. Deputy Lott, in the City Commission of Sewers, last week moved a resolution to the effect—"That it be referred to the General Purposes Committee to consider the practicability of constructing iron bridges over certain portions of the streets, by which passengers might cross without danger, delay, or difficulty." The mover of the resolution complained strongly of the difficulties and dangers of the City crossings, and was well supported by others of the Commissioners; but this is not a subject which needs now to be expatiated on in our columns. The motion referring it to a committee was agreed to.

An Exhibition in Turkey. — The *Levant Herald* says:—"The example of the International Exhibition seems not to have been lost on the Porte. A grand show of native produce and industry has been decided on, and will be held in Stamboul during the coming Ramazan. To secure the successful realization of this idea, special local delegates are to be at once appointed in all the principal districts of the empire, for the collection and classification of samples. These last will be forwarded to the capital free of all custom or other dues, and at the Government expense. As in London, sales of the articles exhibited will be allowed; and, in the event of their not being so disposed of, the Government will engage to buy all the smaller parcels. Prizes, in money or medals, will also be given to the successful exhibitors.

The Newton Stone of Aberdeenshire.—At the Cambridge meeting of the British Association, the Rev. G. Williams read a paper by the late Dr. Mill, of Cambridge, on the decipherment of the inscription on this stone. The paper was illustrated by a cast of the stone, and several diagrams. The cast showed that the stone was a fraction of some columnar erection. Dr. Mill argued that the stone is of Phœnician origin, and found its way to its place of deposit by reason of the constant navigation of Phœnicians from Gaddir (Cadiz) and Tartesus, as well as Carthage, into the British seas. After analyzing the inscription and dwelling elaborately on the form of the characters, Dr. Mill, citing his authorities on all points, arrives at the final conclusion that the stone is inscribed *in the Hebrew* alphabet, and (the incription is imperfect), collocating the characters with their representatives in the ordinary Hebrew alphabet, as they lie on the stone, the translation would read:—"To Eshmún, God of Health, by this monumental stone, may the wandering exile of me, thy servant, go up in never-ceasing memorial: even the record of Han-Thanit-Zenaniah, magistrate, who is saturated with sorrow." The Chairman having invited remarks, Mr. Wright said he differed from the suggestions of Dr. Mill, and contended that the inscription was *in Latin* (!) of the rude character, and certainly belonged to a period ulterior to the visit of the Romans to the island. It was an epitaph, so far as he could make out, and would read (allowing for fractures), "Hic jacet x Constantinus x filius,"—an epitaph to the memory of Constantinus, son of somebody!! Dr. Leonidas Drachasis said that he and Dr. Simonides agreed at first sight that the name in the second line was "Constantine." Mr. Cull said he was of opinion that the inscription *was Greek* (!), and the Master of Trinity thought so too (!). It was then arranged that rubbings of the stone should be forwarded to the most eminent interpreters of such matters. Perhaps some Edie Ochiltree may settle the question.

Defries's Candelabrum.—Although too late to be of much service, we must direct attention to the large glass candelabrum recently completed at the International Exhibition. It is 22 feet high, and contains many thousand pieces of cut crystal glass.

Large Casting.—At Woolwich, on Thursday, a new anvil for one of the large steam-hammers was cast. As the metal reached the required heat at one o'clock in the morning, the whole of the hands had to attend at that hour. The volume of boiling metal, weighing upwards of 50 tons, was then drawn from the various crucibles, termed "cupolas," and was received in a capacious and well-heated furnace, whence, after remaining six hours, it was again drawn off and run into the mould pit. It was there buried up in black sand, to cool gradually, which process will occupy no less than four or five weeks.

Hastings.—A correspondent writes,—The memorial to the late Prince Consort has been commenced. There has been some little difficulty in getting out the foundation, the site fixed upon being the place formerly occupied by the old bridge. The structure, which contains a clock, will not only be an ornament, but of great service to the public. The London and County Bank, which stands opposite the memorial, is built of Tisbury stone, Wiltshire. The scaffolding is being removed. Mr. Parnell, of London, is the architect. Mr. Howell, of Hastings, is the contractor. The carving is now being executed by Mr. Thomas Colley, of London. The clerk of works is Mr. Brunell.

Preserving Wood by Salt.—A correspondent of an American paper says:—"I have used common salt for the preservation of mill shafts or water-wheel shafts, and it has had a good effect in staying the decayed timber. Take a two-inch auger, bore holes into the stick of timber, and fill up with salt, and then plug up the holes tight. In a large stick of timber like a water-wheel shaft, bore a hole through the centre, like a pump, and fill up with salt and plug up, and there is no telling how long this may last, as it has been tried with us, and has answered very well. No man would believe what effect it will have till he tries it. I have used it in a mill shaft that was decaying, and it certainly has helped it wonderfully. I have never seen a salt barrel but what was sound, and will stand more wet weather than any other barrel or stave of its kind."

Memorials and Statues.—Mr. Noble has received instructions from the Albert Memorial Committee in Bath to execute a colossal bust of the late Prince Consort, which is to be placed in the new building to be added to the Bath United Hospital.——Kepler, who was born at the little village of Magstadt, in Wurtemberg, is now to have a statue erected to his memory in the neighbouring provincial capital, the small town of Weil die Stadt. The sum already subscribed amounts to 450*l*.——There has just been erected in the churchyard of Inveresk a monument to the memory of the late Rev. A. B. Sclanders, late minister of the parish. The monument, designed by Mr. R. W. Robertson, consists of an obelisk 8½ feet high, placed on a pedestal 8 feet. On the under part of the obelisk is sculptured in full relief a pigeon on the wing, rising from an open Bible.——The tomb in Beaconsfield churchyard, of the poet Edmund Waller, is being at last restored. The work has been confided, by the present Waller family (the poet's representatives), to Mr. Harley, statuary and mason, Windsor.

Railways in Italy.—The following is an enumeration of the extensive network of railways in Italy conceded to M. Bastoggi:—"1. A grand line starting from Ancona, skirting the Adriatic, and serving Pescara, Termoli, Foggia, Barietta, Bari, Brindisi, and Lecca, with a branch from Bari to Taranto on the Ionian Sea, which together will form an extent of 750 kilometres, or 468 English miles. 2. A branch line from Foggia, passing by Ascoli, Cauza, and Eboli, as far as Salerno, where it joins the line already constructed to Naples; length about 181 kilometres, or 113 miles. 3. A branch line starting from Ceprano (where it meets the line already constructed from Rome to Naples) by Sora, Celano, Sulmona, and Popoli, to Pescara, about 231 kilometres, or 145 miles. 4. A branch of 28 kilometres, or 17½ miles, from Voghera to Pavia. And 5, another branch of 167 kilometres, or 104 miles, from Pavia to Brescia, passing by Cremona. As to this branch, however, the Lombard and the Central of Italy Company claim a right of preference by reason of a previous concession. The extent of the lines to be constructed is 1,357 kilometres, or about 848 miles."—*Galignani.*

The Albert Middle-Class School and College, in Suffolk.—At the sixth meeting of the Executive Committee on this college, held at Framlingham, the committee inspected the architects' designs, which were arranged on screens prepared for the purpose. It was determined that the drawings should be open to the public for two days, and afterwards exhibited at Ipswich for a fortnight, notice being given of the time and place by advertisement, after communication with the authorities. Sir Edward Kerrison and Sir Fitzroy Kelly were requested to ask permission from Pembroke College to commence raising brick-earth immediately in the vicinity of the site.

Divie Viaduct on Inverness and Perth Railway.—This viaduct is now far advanced towards completion. The bridge is one of seven arches, the span of each being 45 feet, while the height of the two centre ones, which form the water way, is 110 feet. The side arches and the embankments are also high. The bridge, when fully finished, will have four turrets or towers at either end, the tops of which will be 120 feet above the surface of the water. Three of the arches are nearly finished. The piers are built of large, square blocks, of a sort of whinstone, quarried a few yards up the Divie from the bridge; and the arches are cast with freestone blocks from the Nairn quarries, taken by railway to Forres, and thence carted for nine miles to Edinkillie.

Sanitary Condition of Croydon.—From a printed report on the quarterly mortality of the parish of Croydon, from July 1 to September 30, it appears that the number of deaths in the summer quarter was at the rate of about 15½ per annum in every 1,000 of the population. There is a considerable variation in the different districts; Norwood only, ranking highest, 17½; the northern district, including Norwood, somewhat less; the central district, including the Union House, under 16½; the southern district, under 14; and the eastern (for several years the most unhealthy) district, showing the remarkably low figure of 7½ per 1,000. The type of disease was not so favourable as in the corresponding quarters of the last two years, but still, on the whole, presented a greatly-improved result upon the average of the last ten years. One hundred and fifty-nine notices for new houses were approved by the local Board of Health.

TENDERS.

For alterations, &c., at No. 56, Cannon-street, for the Leather Cloth Company. Mr. Henry Jarvis, architect:—

Turner	£483 0 0
Tarrant	475 0 0
Macey	470 0 0
Henshaw	454 0 0
Sharpington & Cole	397 0 0
Prince	349 0 0

For new schools at Hulme, Manchester, for the Methodist New Connexion. Mr. R. Scrivener, architect. Quantities supplied:—

McLean	£1,067 0 0
Griffiths	950 0 0
Metcalf & Waterson (accepted)	879 0 0

For premises, Commercial-street, Shoreditch, for Mr. J. Biggs. Mr. W. G. Bartleet, architect. Quantities by Mr. Campbell:—

Downs	£2,850 0 0
Wood	2,793 0 0
Heath	2,782 0 0
Ashby & Sons	2,756 0 0
Pritchard	2,752 0 0
Scott	2,725 0 0
Ryder	2,690 0 0
Norman	2,645 0 0
Condor	2,580 0 0

For warehouse and grainery, for Mr. Stephen Banks, Meadow-road, Hastings. Mr. Hopkinson, architect. Quantities supplied:—

Hoadley & Co.	£551 0 0
Jones	480 0 0
Wellard	463 0 0
Longhurst	449 10 0
Pattenden	448 17 7
Howell	448 0 0
White	431 0 0
Parks	426 0 0
Vidler	424 0 0
Sacie	422 0 0

For new church at Egremont, Cheshire. Messrs. W. & J. Hay, architects. Quantities supplied:—

Jones & Co.	£6,140 10 0
Thomas	5,747 0 0
Fisher	5,319 0 0
Allen	5,196 0 0
Nelson (accepted)	5,179 0 0

For Holy Trinity Schools, Ipswich. Mr. F. Barnes, architect:—

Luff	£1,248 0 0
Pells	1,129 0 0
Smith (accepted)	1,084 0 0
Grayston	988 0 0

For house and premises, New Park-street, Southwark, for Mr. Joseph Sutton. Mr. E. C. Wade, architect:—

Fox	£555 0 0
Bottom	539 0 0
Baguley (accepted)	535 0 0